Industrial Equipment News

FOUNDED 1933

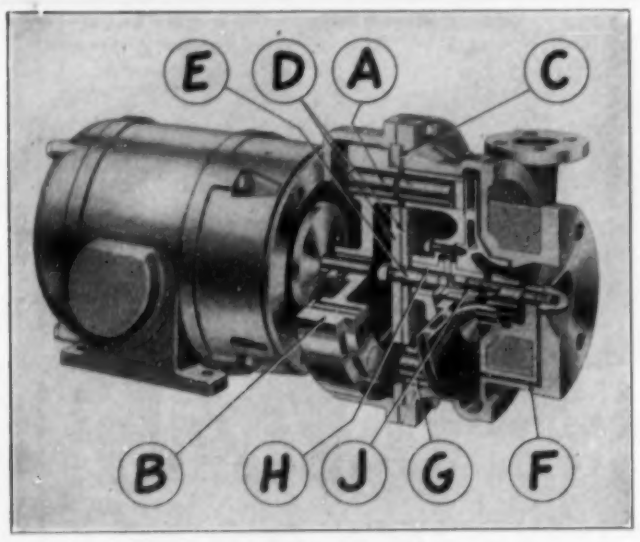
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 2395**

PUMP . . Isolated centrifugal for non-abrasive liquids, to 150 gpm.

Source: PEERLESS PUMP DIVISION
301 West Ave., Dept. IEN, Los Angeles 31, Calif.



The liquid end is sealed

Processes requiring a closed circuit for liquid flow where leakage cannot be tolerated, applications requiring protection of the liquid against contamination and installations where leakage is not permissible, are typical points of use for this new isolated centrifugal pump. The driving and driven ends are separated from each other by a stationary non-magnetic diaphragm. The arrangement eliminates need for a stuffing box. It completely encloses the impeller and employs the liquid being handled to lubricate the impeller and its associated parts as they rotate on the stationary pump shaft.

The pump is available with a 1, 1½ or 2-hp. motor operating a 1,760 rpm. The one pump size available is 1 by 2½ by 8 inches. Materials of construction can be specified for the liquid to be handled. Maximum capacity is to 150 gpm. Maximum head is to 70 feet. The company has built several 10-hp. units operating at 3,460 rpm. with vertical enclosed pumps. Units of this type can be specified to meet given requirements.

The motor, to the left in the illustration, drives a ring of permanent magnets A mounted in a disc B. This disc assembly lies to the left of the non-magnetic diaphragm C and its disc type supports D. The stationary pump shaft E is carried by the diaphragm and by a threaded connection at the right hand intake flange on the pump. A passage F, into this flange and into the shaft, provides lubrication supplementary to that supplied by the liquid that fills the pump housing. The impeller and the driven magnet assembly G secured to it, as well as the radial and thrust bearings H, all rotate on the stationary shaft. The bearings are lubricated by passages J.

If you write maker identify as **IEN - 2396**

Temperature changes can be read at 5-ft. intervals by means of a new indicator consisting of a plastic coated copper circuit with constantan thermocouples every 5-ft. inside a wire rope. The assembly is manufactured by Jones & Laughlin Steel Corp., Gateway Center, Dept. IEN, Pittsburgh 30, Pa., under license from PTC Cable Company. The rope is laid over an area, as in a grain storage bin, in vertical or horizontal position and in any shape to follow given contours. It is available in lengths to 190 feet. Connection is made to suitable indicating and recording equipment to read changes in temperature as an indication of correct conditions or impending trouble.

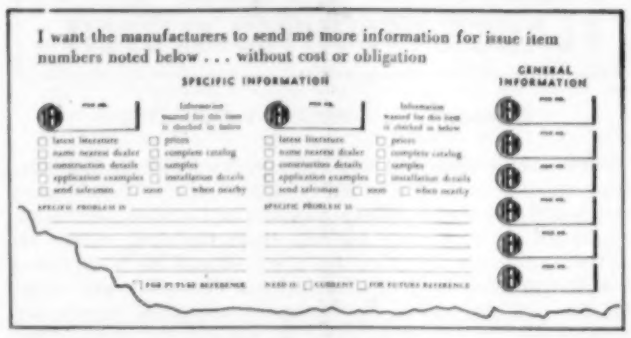
GIVE TO CONQUER CANCER

AMERICAN CANCER SOCIETY

HELP FIGHT CANCER

If you write maker identify as **IEN - 2397**

YOUR INQUIRIES . . New service form based upon your specific suggestions



With this issue of Industrial Equipment News we introduce our new Reader Service Form. It is designed to meet suggestions we have accumulated over the years from you. It is positioned between pages 16 and 17. A duplicate is between pages 112 and 113. Both forms are perforated along their binding edges so you can remove them readily. Both carry IEN's address ready for you to fold and mail back to us for servicing in line with your request for information.

Now you write the item numbers, on which you want "general information," in the column to the right. Now, also you can select and identify certain subjects by their IEN numbers in the "specific information" blocks and indicate, in some detail, the type and extent of specific information you desire in each case. Obviously these inquiries, on which you make specific requests, give the manufacturers who receive them opportunity for specific reply and followup in the exact way you indicate.

Please turn to page 4 and go along with us as we describe the new form.

(continued on page four)

If you write maker identify as **IEN - 2398**

TESTING . . Program control governs a cycle of strength testing

Source: TINIUS OLSEN TESTING MACHINE CO.
1104 Easton Road, Dept. IEN, Willow Grove, Pa.

Bulletin 48

Strength tests involving stress cycling, strain cycling, cross head cycling, production testing, automatic production testing, automatic proof testing and automatic yield strength testing can be set up for progress and completion without requiring operator attention by means of this new Program Controller. The assembly shown is known as Model RM-4, composite design, on which any of the operations named can be set up by turning appropriate knobs. The instrument is available also for single applications to specifications.

In stress cycling, as an example, the control will cycle any prescribed specimen between minimum and maximum load. It can be preset or readjusted between load limits at any time. The cycle will repeat until it is stopped. Load settings and test speeds can be changed during operation. In automatic proof testing, in which the specimens are stressed to a point short of destruction, the testing machine is caused to load at a preset fast speed until a control point is reached. Then the machine slows down, as determined by an auxiliary speed control, until the proof load is established and a second control point is reached. At this point the machine unloads in readiness for the next test. Any number of similar tests can be performed by inserting specimens in turn and starting up until the desired total has been reached.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

MARCH, 1954

VOL. 22 No. 3

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- ☐ *Production, Mr.* .....
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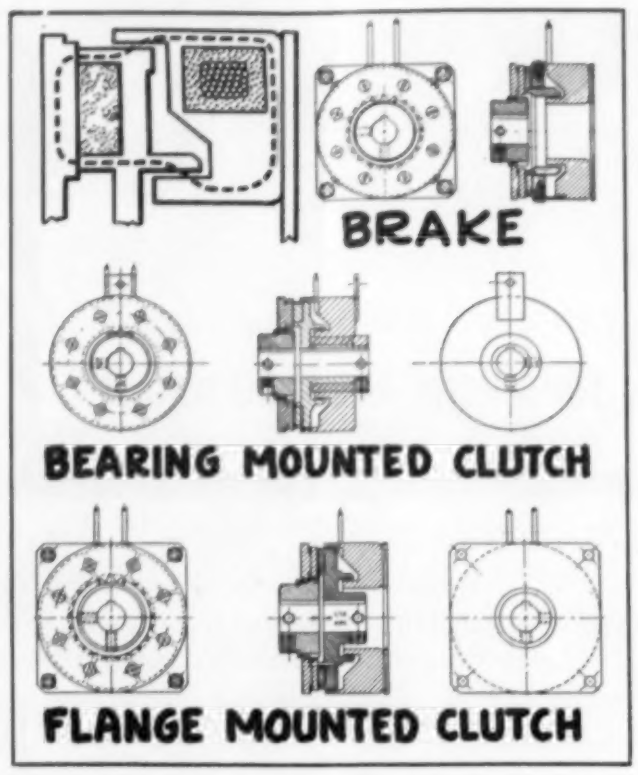
If you write maker identify as **IEN - 2399**

DRIVE . . Electric clutches and brakes for small low torque drives

Source: WARNER ELECTRIC BRAKE & CLUTCH CO. P. O. Box 618, Dept. IEN, Beloit, Wis.



Specifications and details in Bulletin 6158

Immediate engagement and release, for starting, stopping, indexing, cycling, characterize the action of this new line of electrically operated magnetic clutches and brakes. Operation can be set up with push buttons, limit switches, relays, or electronic controls. Three ratings are 8, 60 and 240 in.-lb. based on static torque. Corresponding overall diameters are about 1¾, 2⅝ and 4¼ inches. Maximum recommended speeds are 10,000, 7,200 and 4,500 rpm. Input for the coil can be specified at 6 to 90-volt dc.

Each assembly employs a stationary field coil, a friction faced ring and a hub mounted armature. One of two clutch designs mounts the stationary field on a bearing that, in turn, is secured on the friction faced ring which is mounted on the end of a drive shaft. The armature hub is mounted on the driven shaft in this assembly. The second of the two clutch designs employs a flange mounted stationary field with hub equipped friction rings and armature. The brake assembly mounts its stationary field on a flange also. It is assembled with the friction ring so the latter cannot turn. In this case, the armature is mounted with its hub on the shaft on which braking action is to be applied. Energizing the field attracts the armature to the friction faced ring for quick powerful engagement. De-energizing the field releases it at once.

If you write maker identify as **IEN - 2400**

Plastic is employed in a new center core for use by wire rope manufacturers and is now available from Columbian Rope Co., 309 Genesee St., Dept. IEN, Auburn, N. Y. The new plastic core supplements the core composed of sisal fiber made up in various sizes and lays. The core is extruded using a special polyvinyl chloride compound.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2401**

This ball bearing screw jack is only 7 inches high—can lift 15 tons 2½ inches. It weighs 22 lbs.

Designed especially for those hard-to-get-at-spots too small for a big, heavy jack—the Duff-Norton "Shorty" has made friends in shops, mills, shipyards, and on construction jobs.

For complete specifications on the "Shorty" and other dependable Duff-Norton Journal Jacks, write the world's oldest and largest manufacturer of lifting jacks for Bulletin AD12 M, The Duff-Norton Manufacturing Company, P.O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON *Jacks*

"GIVING INDUSTRY A LIFT SINCE 1883"

If you write maker identify as **IEN - 2402**

THE FACTS at your fingertips

There's a wealth of information in New Departure's application literature that will help you get the most out of bearings you use. Take advantage of New Departure's engineering assistance—New Departure engineers are always—*at your service.*

NOTHING ROLLS LIKE A BALL

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

If you write maker identify as **IEN - 2404**

HANDY & HARMAN
EASY-FLO No. 3 TRIMETAL

For heavy duty joints

This little folder tells all about this new alloy that completely satisfies all strength and other requirements of mounting cemented carbides for heavy duty cutting tools. Write for a copy of the Trimetal folder today.

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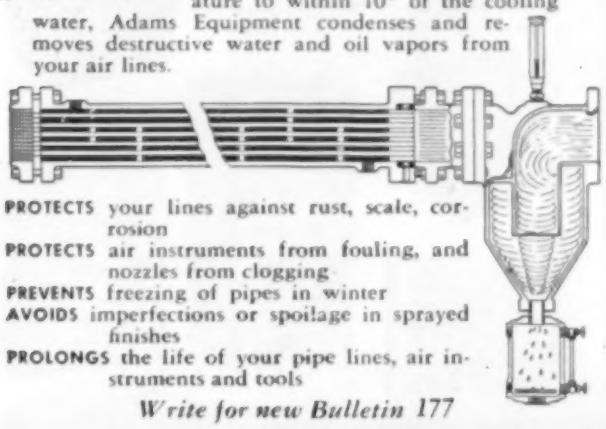

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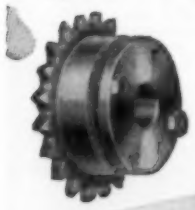

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PROCESSING . . Magnetic clarifier for waste water from paper mills

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Dept. IEN, Middletown, Ohio

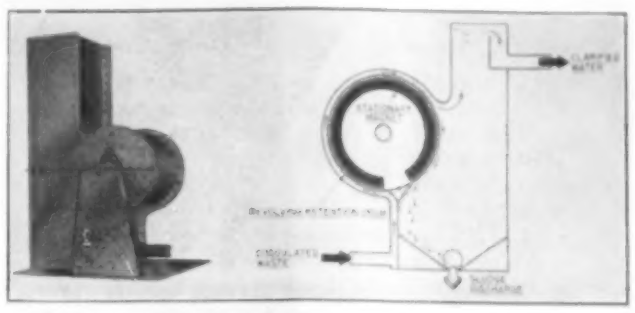

Diagram indicates magnetic action

Suspended matter and colloidal dirt are removed continuously, by this new magnetic clarifier, from waste water issuing from paper making and board mills. The new equipment reduces settling time required by detention tank methods to a few minutes. The clarified water can be reused, in most roofing mills, or the water can be dumped without fear of stream pollution. Capacity is to 720,000 gallons per day.

Contaminated water flows from the paper machine to a small mixing tank where specified small amounts of iron oxide, ferrous sulphate and lime slurry are mixed into it. The mixture flows to a 5-min. detention tank where baffles aid in the formation of a tough floc. Effluent from the detention tank is piped to a group of clarifiers, their number depending on the type of waste to be treated.

Three units are required to handle 500 gpm. for average roofing mill waste. The undesirable solids and fibers containing the white water cling to the iron oxide particles which are mixed with the effluent and, as the water passes over the revolving magnetic drum, the suspended matter is attracted to the face of the drum from where it can be "doctored" off and accumulated. The clarified water is discharged from the top of the unit.

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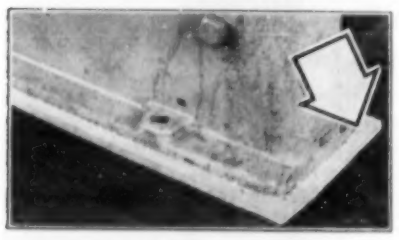

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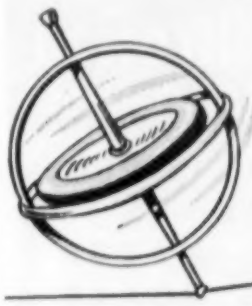

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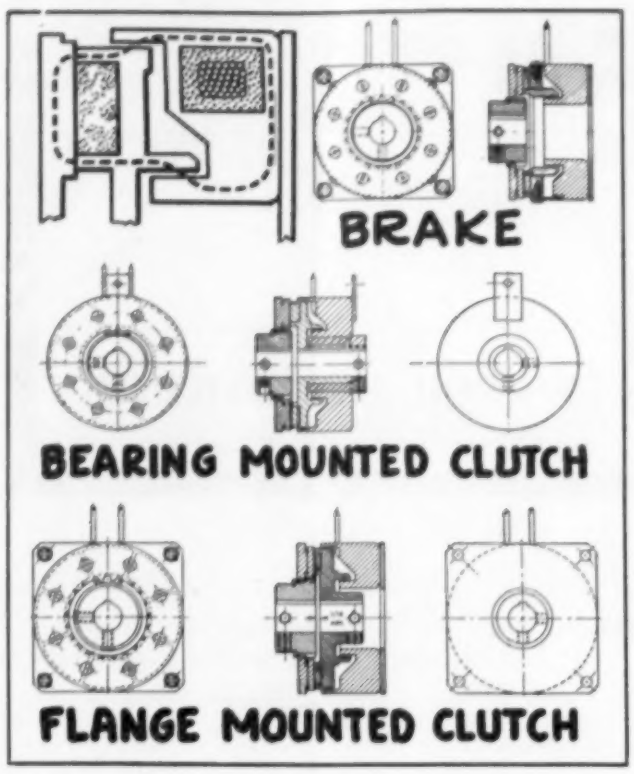

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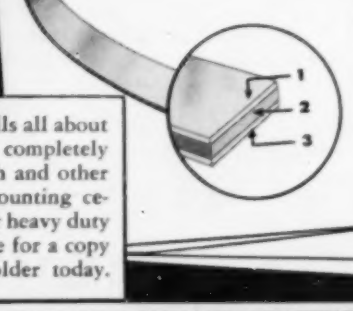

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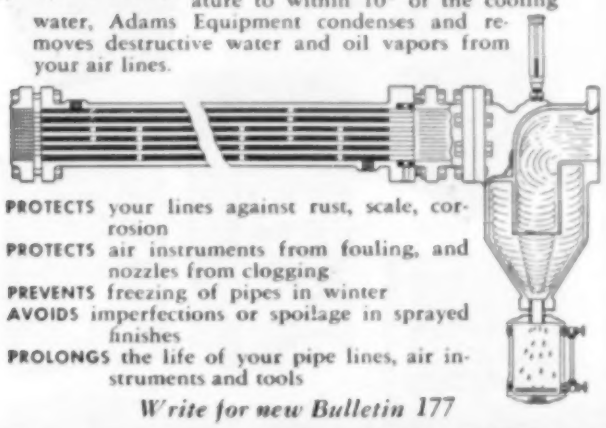

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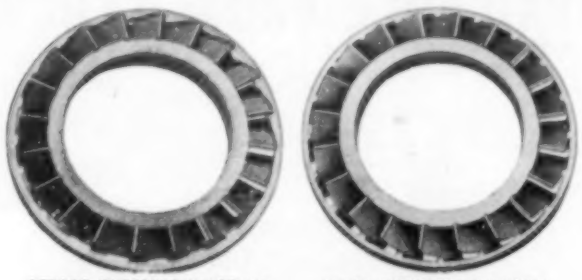

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PROCESSING . . Magnetic clarifier for waste water from paper mills

Source: SHARTLE BROS. MACHINE CO.
Dept. IEN, Middletown, Ohio

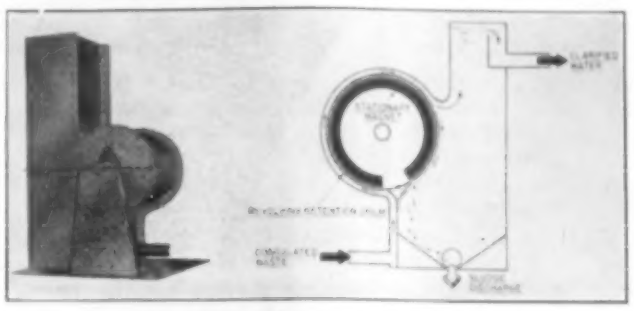

Diagram indicates magnetic action

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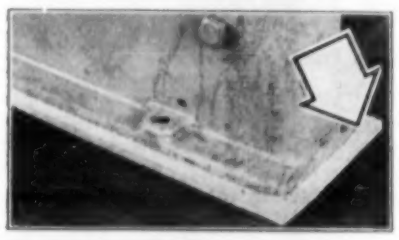
Three units are required to handle 500 gpm. for average roofing mill waste. The undesirable solids and fibers containing the white water cling to the iron oxide particles which are mixed with the effluent and, as the water passes over the revolving magnetic drum, the suspended matter is attracted to the face of the drum from where it can be "doctored" off and accumulated. The clarified water is discharged from the top of the unit.

If you write maker identify as IEN - 2409

ISOLATING . . Vibration insulator replaces anchor bolts under machines

Source: CLARK-CUTLER-McDERMOTT CO.
Fisher St., Dept. IEN, Franklin, Mass.



Bulletin "Air-Loc 4-17-4"

Air-Loc 4-17-4 is a new vibration absorbing floor pad capable of supporting machine loading pressures to 4,000 lb. per square inch. The pad consists of layers of cork and sisal fiber impregnated with Bakelite vinyl resin. The completed pad will not crumble or deteriorate if soaked in oil. Vibration causes it to grip the floor surface more firmly with its 451 in. of gripping edge per square foot. The pad can be reused when it is no longer required under a given machine. It is supplied in standard precut sizes to 32 by 32 inches. The company offers to refund the cost of a trial installation if the user is not completely satisfied.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2410

SAFETY EQUIPMENT FOR ALL INDUSTRIES

TIME SAVING
CON-VENIENT
EXTRA STURDY

Built for SERVICE in Industry

IPCO EXTENSION CORD REEL

Keeps Cord off floor . . . Will not kink or fray . . . No shorts or shocks. Universal bracket for mounting on ceiling or wall, available with various types of fittings at cord end.

Approved By Underwriters Laboratories

Write for Bulletin No. 52

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. Fourth Street • Philadelphia 33, Pa.

If you write maker identify as IEN - 2411

LUBRICATION ECONOMY

LUBRIPLATE LUBRICANT Increased Bearing Life from 2 Weeks to 2 Years!

So says The Globe Company, manufacturer of meat processing machinery. *"In the packing industry where animal acids and moisture quickly destroy anti-friction bearings lubricated with conventional lubricants, LUBRIPLATE prolongs the life of bearings from 2 weeks to 2 years."*

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

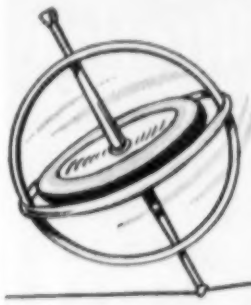
Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N.J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 2412



CASTELL push button LOCKTITE lead holder has PERFECT BALANCE

Perfect balance makes Push Button CASTELL LOCKTITE Holder the king of its class.

Exclusive collet holds lead in **bull dog grip,** preventing slipping or turning.

No graphite dust stains your fingers —because with one-hand push-button action you extend and retract the lead. *No need to touch graphite.* Comfortable "wood-pencil" feel—not metallic.

Equipped with easily-replaced clutch, giving your LOCKTITE indefinite life.

Imported CASTELL 9030 Lead inserted in your LOCKTITE Holder gives you the combination for brilliant results on your drawing board. Ask your Dealer for both — LOCKTITE Holder and Imported CASTELL 9030 Lead in 19 degrees, 7B to 10H.

A.W. FABER-CASTELL
PENCIL COMPANY, INC., NEWARK 3, N. J.

If you write maker identify as IEN - 2413

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1057 Tables
803 Articles
1,620,000 Words
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Here is a book without a competitor . . . a book 25 years in the making. The current, 7th edition of the Metals Handbook was compiled and written by 68 committees of the American Society for Metals; more than 500 metals engineers were hand picked by the Society as the top experts, the men best qualified to write the most authoritative possible reference book on metals, metal properties, fabrication and uses. The book they wrote in the Metals Handbook. It is divided into 37 principal sections, and contains 803 separate articles and data sheets on metals, metal shaping, forming, heat treating, welding, machining, foundry work, cleaning, finishing, testing, inspection, control and research techniques. All metals, all processes are included. The 64-page index and 4-page section on how to use the book make it easy for any reader to find what he wants. Over 40,000 copies of this edition are now in use by engineers, production men, executives, purchasing agents and others. Order your copy today by returning the coupon below. Price is $15.00.

American Society for Metals, Room 708
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Company .....
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City ..... Zone ..... State .....

☐ $15.00 enclosed. ☐ Bill me.

If you write maker identify as IEN - 2414

What do you know about the *Moly-sulfide* LUBRICANT?
A LITTLE GOES A LOT

You may have heard about a highly successful solid-film lubricant which is giving remarkable results in the shop and in the field.

In one 40-page booklet we have collected 154 detailed case-histories describing how difficult lubrication problems have been overcome by molybdenum sulfide. If you wish to be up to date about this solid-film lubricant, write now on your business letterhead for a free copy.

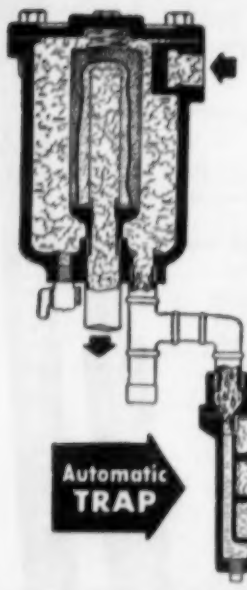
THE LUBRICANT OF MANY USES

Moly-sulfide
A LITTLE GOES A LOT
SEND FOR THIS FREE BOOKLET TODAY

Climax Molybdenum Company
500 Fifth Avenue · New York City 36 · N.Y.

If you write maker identify as IEN - 2415

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operations.

Write for complete data Bulletin 177

R. P. ADAMS CO., Inc.
219 E. Park Drive, Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

If you write maker identify as IEN - 2416

Snappy Action Valves
CRANE Cam and Lever
QUICK OPENING
BRASS GATES

for fast, positive action on steam, water, oil or air lines

You can turn fluids on and off in a snap with this Crane valve. It works on a smooth cam and lever principle, with solid wedge disc. Raises disc fully and seats tightly with no effort; never jams. Made to stand hard usage. Underwriters' approved for hazardous liquids up to 50 pounds pressure. Screwed or bolted cap, depending on size. For further information, ask your Crane Representative or see your Crane Catalog.

WORKING PRESSURES
Up to 125 pounds saturated steam; 200 pounds cold water, oil, or gas, depending on size.
Screwed Ends only.
Sizes: ½ to 3 in.
Air Tested.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
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Industrial Equipment News

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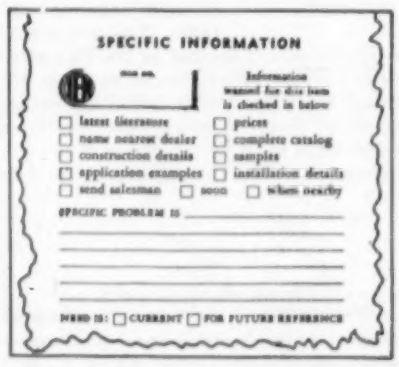
VOL. 22 MARCH, 1954 No. 3

Your Inquiries

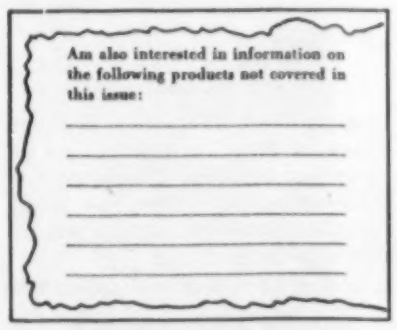
(continued from page one)

Six "specific information" blocks have been added to the left of the "general information" column. You use the column as you always have and we will forward your requests to the manufacturers. You check and make your notations, in the blocks, on any subjects in the issue for which you want specific data and action as you indicate it from the manufacturers.



We have illustrated one of the blocks here so you can see its makeup. Write the IEN number in the upper left-hand corner. Check the squares to indicate your desire for the latest literature, name of the nearest dealer, construction details of the product, application examples. Ask for prices, a complete catalog, samples, installation details. Check if you want a salesman now, soon, or when he is in your neighborhood. Write in any points you consider important in your specific problem. Finally, check if your interests are current or for future reference.

Below the blocks and the general item numbers column is provision to note change from your previous connection, if you have been receiving IEN at a plant from which you have moved. There is provision also to write in your current address for our mailing list so we can make the address change, if you have moved, or add your name to the mailing list if you have not been receiving IEN regularly and now want its monthly product information. There is no obligation on your part if you are actively interested in selection of equipment, tools, supplies, services from your plant and products.



If you have a plant or product problem that is not answered by any of the subjects in the current issue, tell us about it in the space to the right of the form at the bottom of the address side. This little block is illustrated to help you spot it on the form. Use the whole space across the bottom of the form if the block does not give you room enough to write all you want to.

Particularly we hope to know what you think of the new form and we hope to see you making good use of it as the months go by.

W. E. Irish

If you write maker identify as IEN - 2417

750 DIFFERENT CABINET COMBINATIONS
Available for Small Parts Storage, Handling or Display. A Type and Size for Every Need.

We can supply you the perfect cabinet for your particular requirements. 750 different combinations can be CUSTOM - BUILT at production line prices. Free catalog upon request.

AKRO-MILS, INC. Box 989-N AKRON 9, OHIO

If you write maker identify as IEN - 2418

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A NEW QUALITY CARRIER AT AN ECONOMY PRICE . . . FOR 18" 24" 30" 36" BELTS

S-A No. 745
BELT CONVEYOR CARRIER

Now, cut costs and simplify many carrier applications by ordering new S-A 745's direct from stock! Quality design and construction includes rigid welded steel frame—S-A spun-end rollers made from a single piece of heavy gauge steel tubing—labyrinth seal that keeps dirt out of ball bearings, and grease in—3-shot Alemite lubrication. Rollers can be disassembled without tools and are interchangeable.

MAIL COUPON FOR FULL DATA

STEPHENS-ADAMSON MFG. CO.
Standard Products Division
231 Ridgeway Avenue, Aurora, Ill.
Please send me Bulletin on new S-A No. 745 Carriers
Name
Company
Street
City Zone State

If you write maker identify as IEN - 2419

SAVE UP TO 85% ON GOVERNMENT SURPLUS

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Has fine ground lenses of optical glass. Neutralizes eye strain from close work. Binocular design gives third dimensional vision. Allows freedom of both hands. Wear over glasses. Plastic frame with adjustable headband.
SIZES: 20" focal lgth. 1½ power – 16" focal lgth., 1¾ power, 10" focal lgth., 2½ power; 8" focal lgth., 2½ power . . . . . price each ONLY 10.50

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We stock over 100,000 Hydraulic Cylinders in 106 different types and sizes. These can be adapted wherever tremendous power is needed to push, pull, hoist, mould or drive, etc.
SPECIAL
Gives 20,000 lb. thrust using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lb. thrust with 3000 PSI. Can also be used on a low pressure air system. Has 4" bore; 18" stroke; 38½" long. Ideal for shop.
Part No. 99 USED 29.95 NEW 43.95

OTC TOOLS
See our complete line. Pullers for Gears, Bearings, Wheels, Pulleys, Bushings, Shafts, etc.

NEW 10 TON HYDRAULIC PRESS
Use this Press in the Shop or take it with you on the job. Frame is 4" welded channel iron. Has 4½" stroke, 2½" diam. ram. Valve operates piston in both directions. Adjustable platform. Positive power Hand Pump with handle. 2000 PSI pressure gauge.
SIZE: 68" high 27" wide 29" base
129.00

HYDRAULIC HAND PUMP
Operating pressure 1500 PSI. Cap., 1.5 cu. in per complete cycle . . . 12.75

HYDRAULIC ACCUMULATORS
A-2B FLOATING PISTON TYPE – 4"x 18" Built to stand 2,000 PSI 12.75
A-5 VICKERS – 10" dia. Ball type. Built to stand 2000 P.S.I. 24.50
NOTE: Stocks include bargains in Hydraulic Pumps – Valves – Motors – Boosters – as well as Oil, Water and Fuel Pumps, etc.

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Protect Your Machinery with LOVEJOY FLEXIBLE COUPLINGS

CUSHIONS FOR EVERY DUTY 1/6 TO 2500 HP.

Instantly and permanently correct misalignment . . . absorb vibration, shock, back-lash and surge . . . protect motor and driven machine . . . improve production. Cushions changed without shutdown.

Send now for complete catalog and handy selector charts.

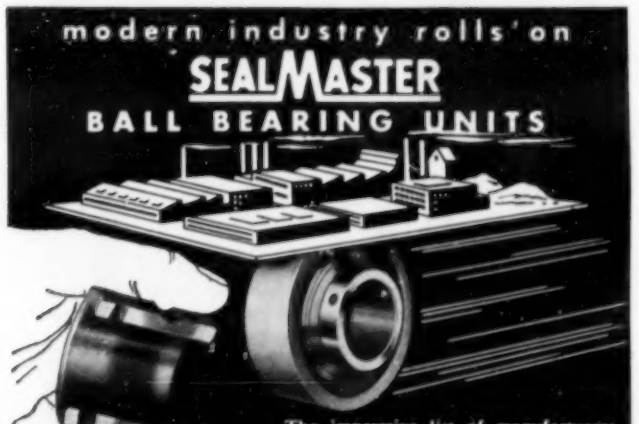
LOVEJOY FLEXIBLE COUPLING CO.
4814 W. Lake Street, Chicago 44, Illinois

Also mfgrs. of Lovejoy Variable Speed Pulleys and Lovejoy Universal Joints.

If you write maker identify as IEN - 2421

modern industry rolls 'on

SEALMASTER BALL BEARING UNITS



ZONE HARDENING
Latest SEALMASTER engineering advancement is Zone Hardening — a completely automatic heat treating process — assuring greater efficiency and added bearing life.

The impressive list of manufacturers standardizing on SEALMASTER Bearing Units reads like a "who's who" of American industry. SEALMASTER engineers in close cooperation with manufacturers have made many worthwhile contributions to the efficiency of both products and manufacturing processes. It will always be a SEALMASTER policy to assist manufacturers in their bearing problems. Write for Catalog 845.

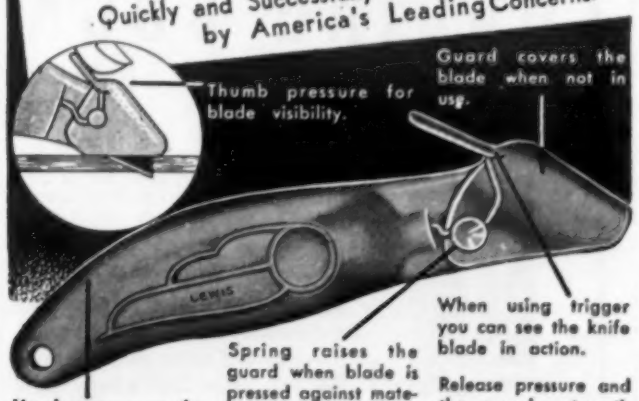
BEARING DIVISION
STEPHENS-ADAMSON MFG. CO.
231 RIDGEWAY AVENUE
AURORA, ILLINOIS

SEALMASTER

If you write maker identify as IEN - 2422

NEW! LEWIS AUTOMATIC TRIGGER ACTION SAFETY KNIFE

Quickly and Successfully Adopted for Use by America's Leading Concerns



No other cutting tool like it. Eliminates the hazards of exposed cutting blades. You must operate it to appreciate its swift and sharp cutting . . . always automatically ready for use. Trigger action gives full blade visibility with safety.

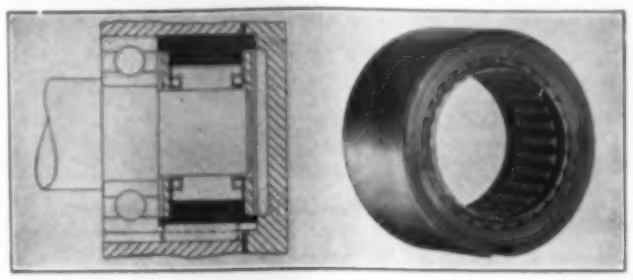
Retail Price $1.50

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

If you write maker identify as IEN - 2423

DRIVE . . One-way clutch to back stop, index, permit over-runs

Source: MORSE CHAIN CO.
7601 Central Ave., Dept. IEN, Detroit 10, Mich.



Typical back stop installation

Series 200 represents new assembly of the company's one-way clutch, initially described IEN-2767-37. The new unit is made in seven standard sizes for Series-200 ball bearing housing bores ranging from 1½ to 3½ in. in diameter. The design is intended for application on a machine shaft without an inner race. Shaft diameter ranges from 0.650 to 2.200 inches. The assembly of keyed outer race, hardened steel cams, retaining rings and garter springs measures 1 to 1¼ in. in width. Free wheeling speed, to 2,000 rpm., will not cause excessive temperature rise.

The clutch is suited for use as a back stop, to prevent reverse rotation. It can be employed for accurate indexing action since it engages and releases instantly. It is suited for use on two-speed drives on the slow speed shaft so this shaft can rotate freely at high speed.

Torque rating is 30 to 500 ft.-lb. when installed as a back stop unit. Rating is 10 to 165-ft.-lb. for indexing applications and 20 to 330 ft.-lb. for over-running duty.

If you write maker identify as IEN - 2424

WELDING . . Spot weld gun heats the work with gas shielded arc

Source: AIR REDUCTION SALES CO.
60 E. 42nd St., Dept. IEN, New York 17, N. Y.

Bulletin ADC834

Two pieces of light gage steel, to ⅛ in., or a light piece and a heavier one, can be spot welded together with access to only one work face with this new Airocospot gun. Power is supplied with a standard dc. motor generator or rectifier type power unit to provide a maximum of 250 amp. with the open circuit at 55 volts or more. The gun employs a water cooled tungsten electrode held in a collet chuck and connects to a source for cooling water and to helium or argon shielding gas. It weighs about 4 lb. and measures 9 in. in length.

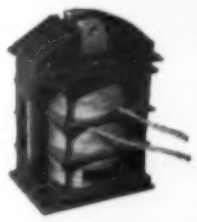
The operator depresses the gun trigger to start the flow of gas and water through circuits in the control panel and to bring the non-consumable thoriated tungsten electrode into contact with the work. The electrode then retracts automatically to establish an arc of preset length. The arc is extinguished at the end of a predetermined interval maximum at 6 seconds. A water interlock prevents damage if the cooling water supply should fail. The gun will make 30 or more joints per minute in standard operation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2425

SOLENOIDS

A-128 solenoid; 18 lbs. at 85% voltage; 3" stroke.



AS-427 solenoid; 14 lbs. at 85% voltage; 2.5" stroke; 600 strokes per minute.

A-100 line of pure D.C. solenoids without cut-out switch; ranging from 1.5 lbs. to 100 lbs.

AS-400 line of high speed solenoids; ranging from 1.5 lbs. to 14.0 lbs. Speed up to 600 strokes per minute.

We recommend that you get acquainted with these two lines of solenoids. They can do things for you that you never thought could be done.

We make 44 other standard lines of solenoids. Also solenoid brakes up to 24,000 ft-lbs. torque capacity.

See our catalogs in Sweet's Catalog Service. Ask for more information.

TROMBETTA SOLENOID CORP.
329 N. MILWAUKEE STREET • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 2426

CHROMALOX Electric TUBULAR HEATERS

FIT THE HEAT TO YOUR WORK

Chromalox Electric Tubular Heaters are available in straight lengths or they may be curved and formed to fit your exact specifications. They provide accurately controlled, economical and dependable convection, conduction or radiant heat. Use them for dies, molds, platens; as immersion heaters in liquids, soft metal and molten salts; or in ovens, air ducts and other air heating applications. Consult Chromalox now for all your production heating needs.

For Full Details
Write for Catalog 50. It lists Chromalox Tubular Heater sizes, types and ratings; sheath materials, fittings and special shapes.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See our Radiant Panels Advertisement, Page 11

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 2427

Here's the marking tool

INSPECTORS LIKE

. . . for fast—safe inspection stamping!

INSERT STYLE
MODEL IH-30

INSPECTOR'S HAMMER

Inspectors like this hammer because it's so well balanced, and inserts can be easily changed. Available in five solid end styles in sizes ½, ¾, 1, 1½ and 2 lbs. High grade handles, of course.

Write for Catalog 100

Mecco SAFETY MARKING TOOLS
M.E.CUNNINGHAM CO.
1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN - 2428

FAST Installation

Allis-Chalmers dry-type transformers can be installed fast because there is plenty of room to make connections. On single-phase units 10 kva and below (shown above) and three-phase units 15 kva and below, a removable plate at the bottom front of the case makes it easy to connect system cables.

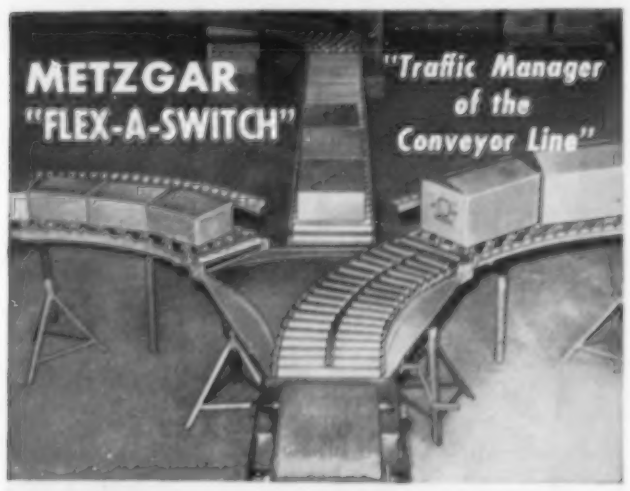
On larger size units you can remove the top cover for equally fast access to connections. All sizes are light in weight, take little space. Mount them anywhere — no vaults are needed.

Get more information from your nearby A-C authorized distributor or district office. Or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 61B6382A.

A-4232

ALLIS-CHALMERS

If you write maker identify as IEN - 2429



Gets maximum efficiency from your conveyor system.

Ideal for switching production lines to various machines for isle system warehousing, assembling orders and all gathering and distributing uses.

Standard Widths:
11½", 15", 18"
Through & 45° R & L.
Spur Switch: 45° R. or L. & Through.

May be furnished with electric or pneumatic Remote Control.

● WRITE FOR PRICES ●

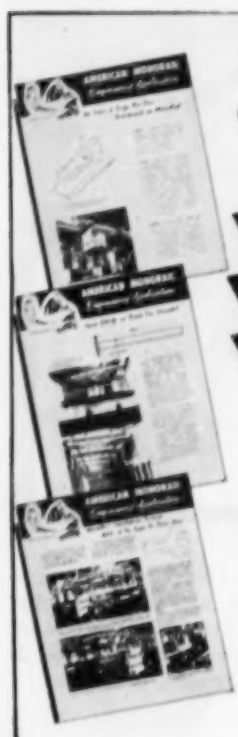
METZGAR CONVEYOR CO.

417 DOUGLAS N. W.

MFRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES

GRAND RAPIDS 4, MICH.

If you write maker identify as IEN - 2430



every study shows a Handling Saving

80 TONS OF SUGAR PER DAY

SAVES $30 ON EVERY CAR UNLOADED

RETURNS 84% OF ITS COST

Many companies are checking their handling problems against the American MonoRail Case Study File of "Engineered Applications." The file contains a series of case studies taken from many successful American MonoRail installations.

If you want to lower your handling costs, speed up production and cut maintenance overhead, let us send you this file. Just drop us a line on your business letterhead, asking for "Engineered Applications File F-1."

AMERICAN MONORAIL COMPANY

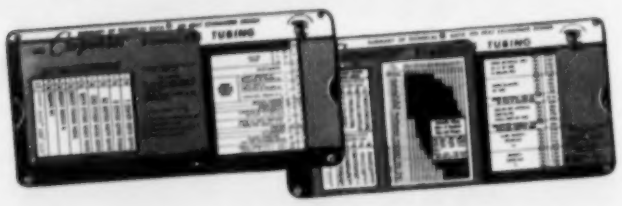
OVERHEAD HANDLING EQUIPMENT

13111 ATHENS AVENUE • CLEVELAND 7, OHIO

If you write maker identify as IEN - 2431

HEAT ON? TRANSFER IT QUICK *

with this Super Slide Chart



*Get the information you need on physical properties, sizes and gauges, cross-sectional area, velocity constants, pressure, weights and other technical data on Carpenter Stainless Tubing for Heat Exchanger applications. It's all condensed in this handy slide chart. Write for it today, no obligation of course.

THE CARPENTER STEEL COMPANY

Alloy Tube Division, Union, N. J.

If you write maker identify as IEN - 2432

GRINDING . . Portable electric tool drives mounted points to 35,000 rpm.

Source: DUMORE COMPANY
1300 17th St., Dept. IEN, Racine, Wis.

Continuous duty rated

Series 35 Handgrinder is a new hand tool to drive mounted points and milling cutters. It is a companion unit to the 22,000-rpm. tool, previously described IEN-2221-54. Its ¼-hp. universal motor can be specified for 110 or 220-volt operation. It is available also with a ⅛ or ¼-in. collet chuck.

The body measures about 2⅜ in. in diameter. The shank is about 1¼ inches. Overall length is 10¾ inches. Weight is a little over 3 pounds. Precision bearings are seated in steel inserts cast in place in the housing.

If you write maker identify as IEN - 2433

STATIC ELIMINATOR . . Liquid removes static from plastic or glass

Source: CHEMICAL DEVELOPMENT CORP.
Endicott St., Dept. IEN, Danvers, Mass.

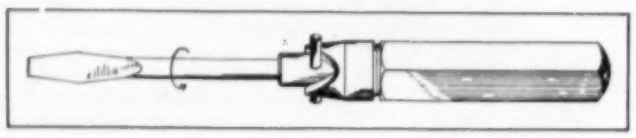
Thin, colorless and transparent

Anstac 2-M is new liquid to be rubbed on a glass or plastic surface with a cloth. Application results in cleaning the surface and eliminating any static charge as well as preventing a new charge from accumulating for a considerable time interval. Application can be made on instrument faces, on windows in aircraft, on plastic inspection windows in flour mills. The liquid is non-flammable and can be stored for any length of time. List price is $2 in quart containers, $3.50 per gallon in drums.

If you write maker identify as IEN - 2434

SCREW DRIVER . . Hand tool is hammered to apply sharp turn action

Source: CAMDRIVER COMPANY
Box 51, Station A, Dept. IEN, Meriden, Conn.



List price about $4

The blade in this new screw driver rides in a pin equipped socket that fits free to turn in the steel handle. A hammer blow on the end of the handle drives it downward and rides a cam surface against the pin to apply sharp turning action to the blade to break a rusted screw loose or to tighten one that is being driven. Blades, with ⅜ and $\frac{5}{16}$-in. shanks, are supplied with the tool. They are interchangeable in the socket. The blade cannot mutilate a screw slot since the hammer blow keeps it seated. Overall length is 10½ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2435

NEW MHS

Spur Curve

with SmoothSwitch mechanism

Here's one you'll want to know all about, because it will end the jam-ups on your roller, wheel, and belt conveyor lines! Linkage system, actuated by solenoid, air or hydraulic ram, or by hand, moves rollers into positive position for smooth operation in either direction. Available in various widths, in regular or heavy duty rollers. 45 and 90° spur curves; 45 and 90° Y switches.

Write today for full information on the new MHS Spur Curve with SmoothSwitch mechanism!

MECHANICAL HANDLING SYSTEMS INC.

4605 Nancy Ave., Detroit 12, Michigan

Offices in Principal Cities

In Canada: Canadian Mechanical Handling Systems Ltd. Windsor and Toronto

If you write maker identify as IEN - 2436

Cut
Assembly
Costs

Set up to 1,200 Monel "Pop" Rivets an Hour

Tight-clinching, blind rivets speed production, cut costs

Here's a hollow, mechanically expanded rivet that makes a tight joint even in thin gauge metal sheet. Easily set with hand or pneumatic tools. No shearing or finishing required.

Made in tough, corrosion-resisting Monel®, hollow "Pop" rivets have approximately same strength, size for size, as solid aluminum rivets. Available in two types, and a wide range of sizes, in diameters to 3/16 in. Low cost, too. Just circle the handy reply card number; or write to the maker, United Shoe Machinery Corp., West Medway, Mass., for descriptive leaflet and prices.

INCO

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.

If you write maker identify as IEN - 2437

HERE'S WHY

PUROX Trade Mark

BLOWPIPES *COST SO LITTLE TO USE AND MAINTAIN*

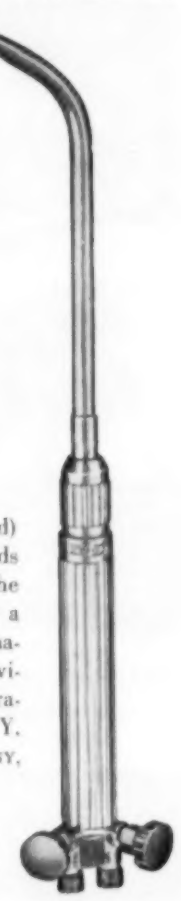
SELF-SEATING VALVES
Reseat scored valves when turned tight.

RUGGED HANDLE ASSEMBLY
Built for long, trouble-free service.

SLIP-FIT "O" RINGS
Perfect gas seals every time.

MIXER IN EACH HEAD
Resists backfires, eliminates burnouts.

SWAGED, PURE COPPER TIPS
Heads snap in handle. No wrench needed.



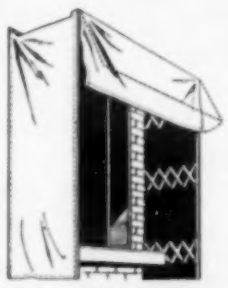
The Purox W-202 blowpipe (illustrated) is available with 13 standard welding heads and 3 multiflame heating heads, all of the snap-in type. Ask your LINDE jobber for a demonstration or write for further information. LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 E. 42nd St., New York 17, N. Y. In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto.

get it from your LINDE jobber

The terms "Purox" and "Linde" are registered trademarks of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 2438

PROTECTS YOUR RAILROAD SIDING OR TRUCK LOADING DOCK



Men and merchandise remain dry . . . damage is prevented.

A simple, inexpensive way to make your loading dock useful the year around. Mamaux Dry Dock Cover folds flat when not in use. Made of heavy flame and water-resistant canvas, sturdy frames and hardware. Cover roof slopes for rain run-off; canopy extends inside car or truck—keeps walkway dry.

Three scissors arms on each side offer rigid support. No bottom bar to impede truck tailgate.

Write or phone for full details
Each cover is custom made to fit your loading dock

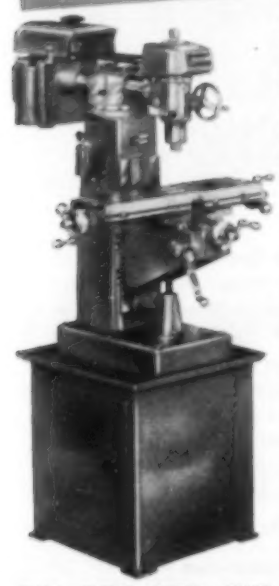
A. MAMAUX & SON
120 Blvd. of Allies • Pittsburgh 22, Pa.
Phone Court 1-3500

If you write maker identify as IEN - 2439

versatility + accuracy + economy +

another great new **PLUS...**

The CLAUSING VERTICAL MILLER



The new Clausing Vertical Milling Machine has more Plus Value features than have ever before been available in a miller at or near its price!

It has Versatility Plus! It is actually several machines combined in one. The spindle head can be swiveled in a vertical plane and set at any angle, and turret rotated in a horizontal plane making it possible to mill, drill, ream and shape at all angles, with one setup.

It has Accuracy Plus! The heart of the Clausing Mill is its rigid, high precision spindle head. It has 7 ball bearings — spindle is chrome nickel steel, hardened and ground—quill, hardened and ground, has honed bearing seats—overarm is rigid steel casting with ¾" thick walls precision ground. All feed screws have ground threads, turn on ball bearings. Table surfaces and dovetail ways on table, saddle, knee and column are precision ground.

It has Economy Plus! The Clausing reduces setup and operating costs. It's low in initial investment, low in upkeep costs. Write today for the complete story!

CONDENSED SPECIFICATIONS

Size of Table	6" x 24"
Longitudinal Table Travel	15"
Transverse Table Travel	5"
Vertical Travel of Knee	12"
Maximum Distance Spindle to Table	12"
Maximum Distance Spindle to Column	8¾"
Quill Travel	3"

Spindle Speeds: Six, 180 to 3250 R.P.M. No. 7 Brown and Sharpe or No. 2 Morse Taper Spindle Optional. Operates from ⅓ or ⅔ HP, 1725 R.P.M. Motor.

MILLS, DRILLS, BORES, REAMS AND SHAPES . . . AT ALL ANGLES WITH ONE WORK SETUP!

CLAUSING DIVISION *Atlas Press Company*

3-105 N. PITCHER ST., KALAMAZOO, MICHIGAN

LATHES • DRILL PRESSES • SHAPERS • MILLING MACHINES

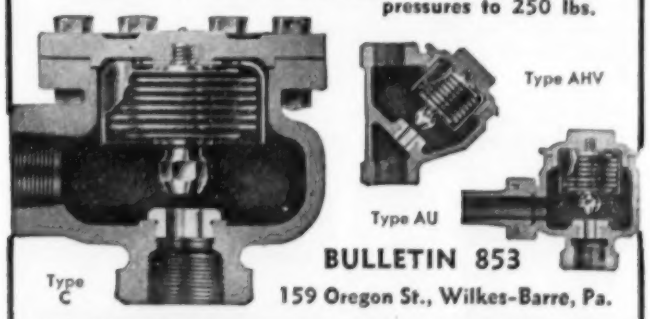
CLAUSING

If you write maker identify as IEN - 2440

Nicholson Steam Traps

CUT HEAT CYCLE from 45 to 27 min.

"One of the best savings we've made in some time," stated the plant engineer of a large mid-west processing plant after Nicholson thermostatic steam traps replaced mechanical units, cutting average heating cycle of important equipment 40%. Credit is given the higher, more even temperatures Nicholson traps effect. 2 to 6 times average drainage capacity. See why leading plants are increasingly standardizing on Nicholsons for faster heat transfer. 5 types: sizes ¼" to 2"; pressures to 250 lbs.



BULLETIN 853

159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.

TRAPS · VALVES · FLOATS

If you write maker identify as IEN - 2441

FAR LESS TIP BREAKAGE with "RING SEAT" CENTER DRILLS

USE "RING SEAT"

CENTER DRILLS

IF YOU GRIND BETWEEN CENTERS

The "R" type, curved contour Ring Seat center drills give you a stable, accurate, precision center, quickly restored after heat-treat.

Ring Seat center drills produce a protected center at no extra cost—and carry a built-in discount because they last longer.

Lapping After Heat Treat

is a simple quick operation since only about one-third the usual area needs clean-up. Lapping with a rotating felt wick removes heat scale and restores a perfect center — at the original place.

• A PREMIUM DRILL AT NO EXTRA COST •

LINK INDUSTRIES

13848 Elmira Detroit 27, Mich.

FREE CIRCULAR

If you write maker identify as IEN - 2442

PIPE . . Laminated glass-plastic, chemically inert and heat resistant

Source: RESISTOFLEX CORPORATION
Dept. IEN, Belleville, N. J.

At present in pilot plant production

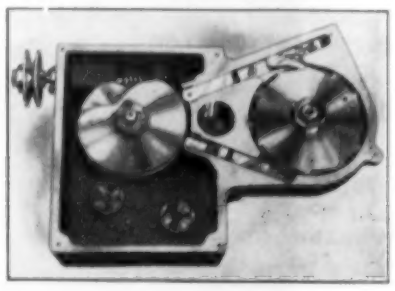
Fluoroflex-T, the company's compound based on teflon, is employed as the inner tube of a new line of glass fabric reinforced pipe. The fabric is laminated on the internal tube and is impregnated with the compound in a construction that makes the tube and lamination a unit structure. The pipe ranges from 1 to 4 in. in nominal size. It is supplied in 12-ft. lengths. It is inert to acids, caustics, organic solvents and corrosive chemicals. It is suited for a working temperature range between minus 100 and plus 500 deg. F.

Burst pressure ranges from 1,600 lb. per sq. in. for the 1-in. size to 400 lb. per sq. in. for 4-in. pipe. Weight is 21 to 80 lb. per 100 feet. The pipe is fracture proof, non-aging and can be cut with a saw. The company has developed a line of corrosion proof fittings, with a flaring tool and a flare fitting made of the plastic, to assemble runs of the pipe. Elbows, tees, reducers and adaptors, as well as coupling flanges, are included.

If you write maker identify as IEN - 2443

INDEXING . . Rotary table is cam operated for 12 work positions

Source: MAGNAT MACHINERY & PATTERN CORP.
Dept. IEN, Leeds, Mass.



Patents applied for

Two cams are mounted on a worm driven shaft in the housing of this new Microdial table. One cam drives an indexing latch. The other cam positions a positive stop in the ratchet tooth path beneath the table previous to the completion of each index period. Thus over-riding of the station is mechanically impossible and work positioning can be guaranteed within 0.001 inch. Drive is by a ¼-hp. motor with belt connection to a variable pitch sheave on the worm shaft.

The index table measures 12 in. in diameter and mounts on a tool steel ring positioned by dowels on a similar ring that rides the ratchet wheel. The arrangement permits table interchange for a range of tooling and work positioning. Overall dimensions are 20¼ by 14¾ by 4¼ in. to the top of the table ring. All parts that come in contact with each other are made of tool steel, hardened and ground. The mechanism operates in a bath of oil. A control shaft extends through the housing top beside the table to actuate and time operations of equipment with which the table is employed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2444

"Pre-Fab" Conveyors

Write for copy today

See this book, containing new and improved features in STANDARDIZED conveyors.

- Pre-engineered
- Easily assembled
- Produced in quantity
- Quick quotations
- Fast shipment
- Low price

Write for complete information, contained in book on ADAPTO UNITS, today.

LOGAN CO. 276 Cabel St., Louisville 6, Ky.

Logan conveyor ADAPTO UNITS

If you write maker identify as IEN - 2445

This Rayotube detector is sighting on the work between coils of the heating unit.

• Mounted only 4 inches from an induction heating coil, this new small target Rayotube detector can focus on an opening as small as 0.1 inch between turns of the coil, and through this opening sight on the hot surface of the work.

Teamed with a Speedomax instrument it enables you automatically to measure, record and—if desired—control work temperature during the entire heating cycle.

If you'd like more details just write us at 4905 Stenton Avenue, Philadelphia 44, Pa.

LEEDS & NORTHRUP

instruments · automatic controls · furnaces

Jrl. Ad. NS8(1)

If you write maker identify as IEN - 2446

SAVE 2 WAYS on Chain Drives and Conveyors

This Book Shows You How

With Baldwin-Rex Double Pitch Roller Chain, you save both cost and weight without sacrificing the high quality of standard roller chain. Where speeds are slow to medium, loads are moderate and centers are long, Double-Pitch is often the economical choice.

For all the details on how this precision chain can save you important money and weight, just use the coupon to send for our free Double-Pitch Bulletin.

BALDWIN-REX® ROLLER CHAINS

Chain Belt Company 53-409
358 Plainfield Street, Springfield 2, Mass.

Please send me Bulletin 51-2.

Name.....

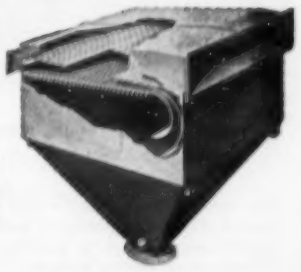
Company.....*Dept*.....

Address.....

City.....*State*.....

If you write maker identify as IEN - 2447

Buell-designed 'LR' Collector Stops Fly Ash From Small Boilers!



High efficiency from 100 to 2000 BHP. Traps 99% of all 100-mesh and larger cinder discharge. Is effective on natural draft boilers!

For complete details write for latest 'LR' Bulletin. Buell Engineering Company, Dept. 22-C, 70 Pine Street, New York 5, New York.

buell

Engineered Efficiency in FLY ASH COLLECTION

If you write maker identify as IEN - 2448

If you are looking for a rugged, easy-running trailer, the THOMAS "General" is the trailer for you. A choice of 5 platform sizes that can be "Job-Suited" with superstructures to carry your loads more efficiently and economically. Available with steel or rubber-tired wheels, with Hyatt roller bearings and automatic or manual couplers. Before you buy an Industrial Trailer find out how THOMAS can increase your production and lower your handling costs.

THOMAS TRUCK AND CASTER COMPANY
444 Mississippi River
KEOKUK, IOWA

Send for free Literature

If you write maker identify as IEN - 2449

Only TRICO can make this claim

NO OTHER RENEWABLE FUSE Can Give Your Circuits the Same Complete PROTECTION

Because only . . . TRICO Provides a CUSTOM-BUILT *"Powder-Packed"* Renewal Element THAT MAKES THE *Difference*

"Powder-Packing"
Protects link against bending, twisting, fractures. Gives support against sagging, stretching, thinning out . . . RESULT: Less fuse blowings.

"Powder-Packing"
Chokes arc and hot flashes, absorbs explosive pressures. RESULT: No fire and accident hazards or damage to fuse casings. No cleaning or scraping.

"Powder-Packing"
Acts as heat insulator, absorbs heat, provides effective barrier or baffle. RESULT: TRICO fuses operate cooler, GIVE THREE TIMES THE SERVICE.

"Powder-Packing"
Prevents tampering, link interchanging. Only TRICO element can be inserted. RESULT: No doubling-up dangers . . . no mistakes . . . no needless motor burnouts.

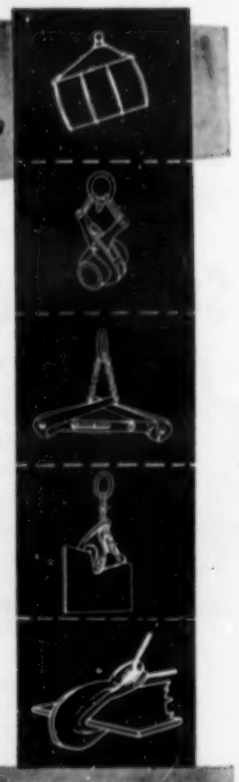
Pull Fuses Safely with Shock-proof TRICO
FUSE PULLERS
Prevent burns, shock, serious infection. Also handy for adjusting switch and fuse clips.
WRITE for BUL. NO. 5

WRITE FOR BOOKLET 206-A

TRICO FUSE MFG. CO. Milwaukee, Wis.

If you write maker identify as IEN - 2450

PICK 'EM UP *Faster . . Easier*



DOWNS SAFETY GRABS ...GRIP ANYTHING!

Yes we said anything—odd shapes, round, oblong, square or even loose objects such as bags or bundles. Best of all you save money on your handling problems while protecting employees.

Downs Safety Grabs are engineered to provide a load safety factor greater than rated capacity plus a Bulldog grip that won't let go until you release the load. There's a Downs hook, grip, tong or sling to fit every handling problem. Write for free illustrated catalog 200 today!

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 W. VERNON AVENUE • LOS ANGELES 37, CALIF.

If you write maker identify as IEN - 2451

LIGHTING . . Electric hand lamp with hinged flashing red signal beacon

Source: FAIRBANKS MORSE & CO.
600 S. Michigan Ave., Dept. IEN, Chicago 5, Ill.

For utility use

Pivoted on the handle of this new Beacon Lamp is a support arm terminating in a socket that carries a flashing bulb covered with a red Fresnel lens of molded plastic. The arm can be positioned vertically, as shown in the illustration, to provide a beacon signal. It can be hinged down in horizontal position over the handle so light from the Fresnel lens is directed to the rear as a danger warning to protect the worker carrying the lamp. The reflector equipped light at the front is available with a sealed beam lamp or with a standard bulb as specified.

Power is supplied by standard 6-volt lantern battery in the steel housing. Finish is in red baked enamel. Overall dimensions are 10¾ in. in length with the signal beacon down in horizontal position. The reflector housing at the front measures 4¼ in. in diameter. The battery housing is 6-in. in overall length. Two lamp switches are standard equipment.

If you write maker identify as IEN - 2452

PROTECTING . . Plastic glove particularly suited for laboratory use

Source: HOUGHTON LABORATORIES INC.
322 Bush St., Dept. IEN, Olean, N. Y.

Sizes for men and for women

Hyflex 340 is a new vinyl plastic glove that is resistant to attack by most acids, oils, resins, alkali solutions. The glove was designed initially for workers employed in casting and potting resins. It is characterized by its free individual finger action and by its non-adhering characteristics in contact with Hysol casting and potting resins.

If you write maker identify as IEN - 2453

INSULATING . . Rubber bumpers for mobile appliances and equipment

Source: DARNELL CORPORATION LTD.
12000 Woodruff Ave., Dept. IEN, Downey, Calif.

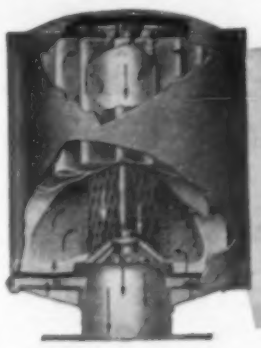
Ready to apply

Compounded rubber, for resistance to abrasion and shock, is molded with a reinforcing steel insert in manufacture of this new line of angle strip and doughnut bumpers. Standard color is neutral green. Other colors can be specified on special order. Each of the bumpers is suited for installation on wood or metal equipment housings. The doughnut unit is intended particularly for the end of tubular handles.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2454

If you write maker identify as IEN - 2455



MODEL D Intake Filter

STAYNEW DRY TYPE INTAKE FILTERS *NEED NO SERVICING!*

Only Staynew Intake Filters have the ability to remove air-borne particles without the necessity of viscous filter aids. The *dry-type* filtering medium becomes even more efficient as it accumulates dust. Resistance increases very slowly with use. Staynew filters frequently operate two or more years without attention. When cleaning is indicated, a brush or simple vacuum tool is all you need. There are no oil reservoirs to clean and refill—no oil coatings to renew.

Write today for Intake Filter Bulletin 100

Representatives in principal cities

DOLLINGER STAYNEW FILTERS

DOLLINGER CORPORATION
3 Centre Park • Rochester 3, N. Y.

ALL TYPES OF FILTERS FOR EVERY INDUSTRIAL NEED

If you write maker identify as IEN - 2456

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

SAFETY IS NO ACCIDENT

Now, more than ever, the safeguarding of industrial workers is vital to maximum production. Every accident slows up operations.

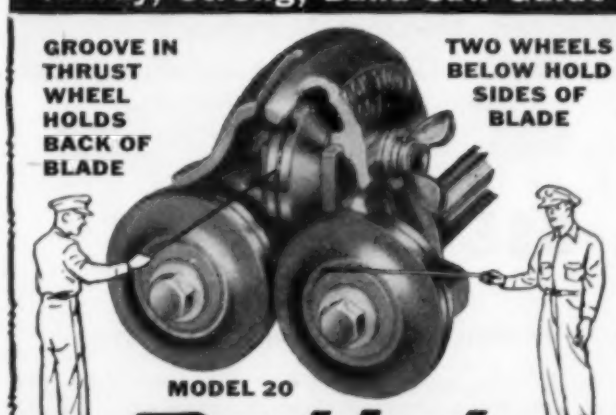
Stonehouse Accident Prevention Signs cover every conceivable hazard. Hundreds of stock-worded signs are ready for prompt shipment. • Special wordings also produced to your specifications.

Our complete Catalog No. 9, in full color, is free on request.

Stonehouse SIGNS, Inc. MANUFACTURERS
Stonehouse Building • 842 Larimer
Denver 4 Colorado
"Signs Since 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

Sturdy, Strong, Band-Saw Guide



MODEL 20
Paddock BALL-BEARING **BAND SAW GUIDES**

MODEL 20 is designed to fit above or below saw table. Interchangeable ball-bearing wheels turn with blade—give strong, friction-free support to blade. Cut out section shows V-shape groove that supports back of blade. Lower wheels support sides of blade. Better adjustment to thrust wheel for ⅛" to 1¼" wide blade. Model 20 can be installed on machines having 2½" back of blade to guide post. Write, giving size and make of machine on which guides will be used.

SHIPPED ON APPROVAL WHERE VALUE IS QUESTIONED

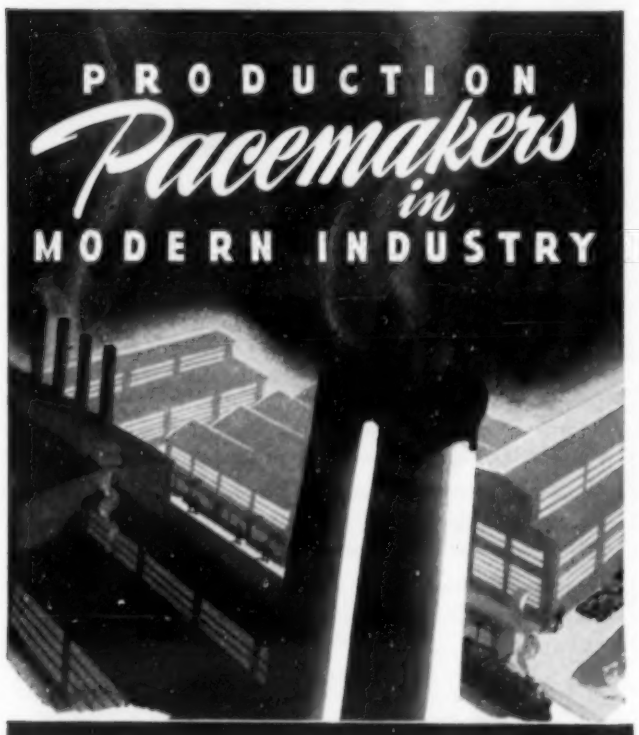
PADDOCK TOOL COMPANY
Guide Makers Since 1921
1418 Walnut Street Kansas City, Missouri

If you write maker identify as IEN - 2458

The simpler way to save on fastenings to metal and plastics

PARKER-KALON®
The Original **SELF-TAPPING SCREWS**

If you write maker identify as IEN - 2459



DPS SCREWDRIVERS *and Motorized* **HOPPERS ....**

PROVIDE ASSEMBLY SPEED THAT CLEARS THE WAY FOR FASTER, UNINTERRUPTED OUTPUT

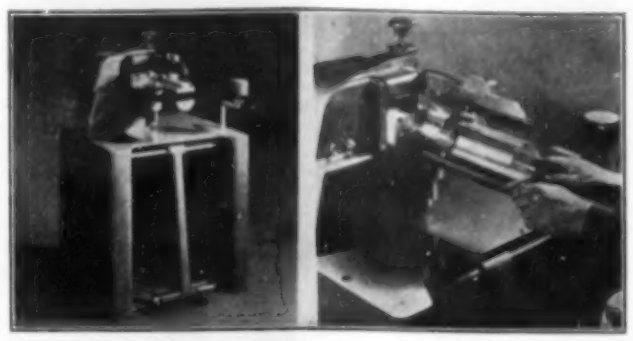
● Your production program need not be retarded by outmoded assembly methods . . . Substitute slow manual handling with speedy, mechanical action . . . Use DPS modern power-driven equipment . . . Benefit by the advantages of lower labor costs, on-time deliveries, greater profits . . . Detroit Power Screwdrivers and Motorized Hoppers have brought about a new era in the feeding and assembly field. Find out quickly how these advanced machines can be adapted to your requirements . . . Send samples now for detailed information.

DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICH.

If you write maker identify as IEN - 2461

FORMING . . Foot operated machine makes cylinders of thermoplastic strip

Source: TABER INSTRUMENT CORP.
111 Goundry St., Dept. IEN, North Tonawanda, N. Y.



Solvent applicator is on housing

Cylinder Fabricator Model 138 is a recently improved machine in the company's line. Plastic strip is wrapped by hand around a two-part mandrel, after applying solvent along one edge. While it is held on the mandrel the latter is expanded to predetermined cylinder size and an electrically heated heat sealing bar is brought down to close the seam.

Mandrel expansion and sealing bar movement are by means of a foot pedal which the operator pivots toward the rear of the machine. The mandrel is interchangeable and available in five sizes to make cylinders ranging from about 2⅜ to 9½ in. in diameter. Mandrel length 10 inches. A back gage can be set for cylinders of varying length.

If you write maker identify as IEN - 2462

TRUCK . . Extension forks add to "reach" of Ready-Fork truck

Source: RAYMOND CORPORATION
35119 Madison St., Dept. IEN, Greene, N. Y.

"Boardinghouse reach"

New extensions have been developed to apply removably on the forks of the company's Ready-Fork power lift truck, previously described IEN-4816-53. With the extensions in place it is possible to stack loads to 48 in. in length from aisles measuring 72 in. in width. Load capacity is 1 ton at 24-in. load center.

The truck is characterized by the pivoted arm support on which the forks are mounted. The pivoted arms move up and down as a unit with the forks for vertical elevation to 51 in. of free lift height. They also pivot at their centers, after the forks have been brought to a predetermined elevation, to move the forks a maximum distance of 24 in. to the front of the truck horizontally.

A load can be carried close to the truck uprights and turned to face a storage space. Then the load can be lifted and finally moved forward for deposit. In reverse direction, the load can be picked up from a storage pile, brought back close to the truck and carried to a new location. Power is supplied by a 12-volt battery that slides into place for quick servicing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2463

NEW FREE CATALOG
Brings You GREATEST SELECTION of
Self-Locking **SET SCREWS**

Whatever your application may be, if better holding or vibration or close-precision-setting are factors, you will find the right Set Screw in the complete Setko range. Write us a brief description of your problem or send blueprint and we will be glad to supply you with free test samples of Zip-Grip*, Nu-Cup*, Off-Set, or other type Set Screws, whichever we believe will best suit your particular needs.

Simply write your name and address on margin of this page, tear out and mail today.

Set Screw & Mfg. Co.
5 Main St., Bartlett, Ill. (Chicago Suburb)
We Specialize in Solving Puzzling Set Screw Problems

If you write maker identify as IEN - 2464

Now you can...
SPRAY HOT WAXES

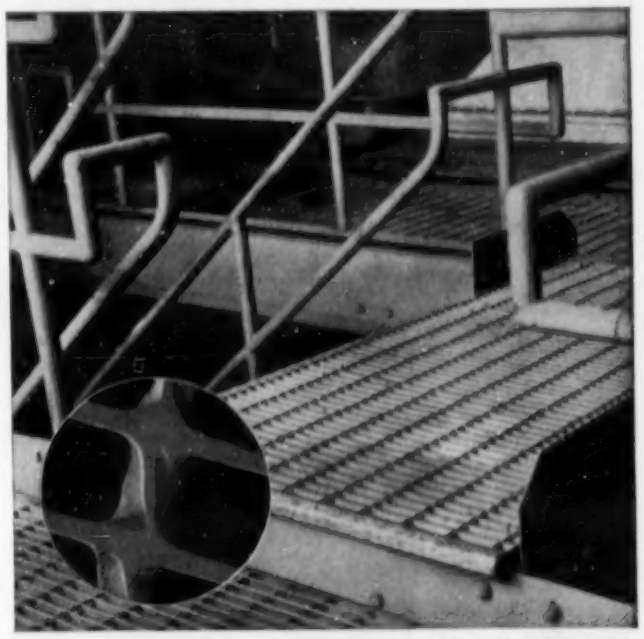
with *Sta-Warm* electrically heated spray gun assembly, flexible heated hose and pressure tank.

Many users of melted waxes have wanted to spray-coat the interiors of various metal, wood or fibre containers. You can do this with the new Sta-Warm wax spraying equipment. The economies are numerous in material saved, speed of processing and selection of areas to be coated.

Inquire today ▶ outlining your current problem.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 2465



Grating by BLAW-KNOX

where do **you** need **steel grating?**

There must be lots of places where you are now using grating—floors, platforms, walkways, catwalks and stair treads, for example.

But how about other uses—such as some sturdy shelving or a fan guard—or for covering a dangerous open pit or a light well. Take a good look around your plant and you'll probably come up with several jobs, including perhaps a new use, as steel grating is adaptable to many applications.

Any time you want some help on a job related to grating, we'll be glad to hear from you.

Only BLAW-KNOX Electroforged® Steel Grating and Stair Treads —have these five exclusive features:

1. rigid one-piece construction —easy to install
2. all surfaces accessible —easy to paint
3. no sharp corners to clog —self-cleaning
4. maximum open area —for light and ventilation
5. non-slip twisted crossbar —safe footing

A short note will bring you a copy of new Bulletin No. 2365-R—a dimensional sketch will bring you a quotation.

BLAW-KNOX COMPANY
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.
BLAW-KNOX EQUIPMENT DIVISION GRATING DEPARTMENT

GRATING APPLICATIONS: floors • platforms • walkways • catwalks • stair treads • fan guards • shelving • and many other uses, both outdoors and indoors, for versatile steel grating

If you write maker identify as IEN - 2467

Profit with Eastman

STRAIN RELIEVERS

They Pay For Themselves...

Increase service, satisfaction and sales appeal of your products.

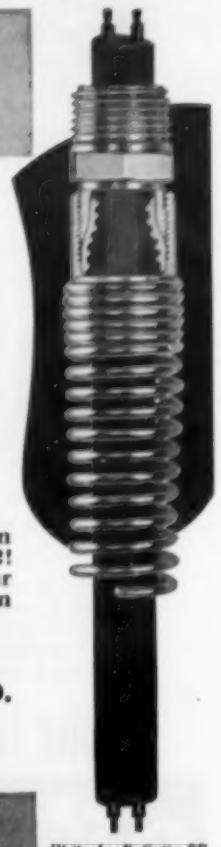
- Increase service and safety of cords; reduce short circuit hazards.
- Positive grip prevents pulling wires from terminals; "the harder you pull—the tighter it grips!"
- Replaceable guards, couplings, cut extension cord repair time on portable shop tools.

Add to sales appeal and value of your finished products, portable tools, appliances, etc.

Eastman's original patents on Strain Relievers dated back as far as 1922! Our 31 years of experience is your guarantee of quality, correct design and satisfactory performance.

"Safeguarding Industry's Lifelines of Mobile Power"

EASTMAN MANUFACTURING CO.
Since 1914
Dept. IEN-3, Manitowoc, Wisconsin



Eastman *first in the field* **HYDRAULIC HOSE ASSEMBLIES**

Write for Bulletin SR. Complete listing of all sizes, types.

If you write maker identify as IEN - 2468

THE JOHNSON CORP., 846 Wood St., THREE RIVERS, MICH.

If you write maker identify as IEN - 2469

with 4 **BIN-DICATOR** BIN-LEVEL INDICATORS

Three-stage conveyors filling silos from under-car hoppers had no automatic feed control. If either of last two conveyors stopped, preceding one jammed; had to be opened, cleared by hand. Workman suggested Bin-Dicators which stop feed automatically; now save $1125 yearly in labor and material alone for this leading chemical manufacturer.

BIN-DICATOR, "The Eyes of the Bin" automatically reports levels of materials in bins, chutes, hoppers, etc., controls conveyors and filling systems.

NEW CATALOG FREE

THE BIN-DICATOR CO.
13946-B Kercheval • Detroit 15, Mich.

If you write maker identify as IEN - 2470

DRIVE . . Variable speed control operates dc. motor from an ac. line

Source: GENERAL RADIO CO.
275 Mass. Ave., Dept. IEN, Cambridge 39, Mass.

Stepless regulation

The company announces addition of five new Variac speed controls to its line, previously described IEN-7190-52. The line now covers ratings of 1/15 to 1½ hp. It is possible to start delicate equipment or critical processes smoothly and slowly. Simple installation, elimination of warm-up time, long life and good short period overload rating are characteristics. List price, without the motor, ranges from $75 to $495. The motor can be added at a list price from $17.50 to $195.

Separate selenium rectifiers supply the field and armature power. A Variac adjustable auto-transformer, ahead of the armature rectifier, makes it possible to vary the armature voltage smoothly and with good regulation from rated value down to zero. The selenium rectifiers require no warm-up time and make it unnecessary to use electron tubes. Torque pulsation is virtually eliminated.

Construction includes dynamic braking, speed range from that rated for the motor down to zero at constant torque, magnetic circuit breaker overload protection, manually operated stop-start-reverse switch, assembly in a metal housing. Dynamic braking and reversing are not available on the smallest size of the new control.

If you write maker identify as IEN - 2471

RECTIFYING . . Selenium unit prevents arcing at electric contacts

Source: FEDERAL TELEPHONE & RADIO CORP.
100 Kingsland Road, Dept. IEN, Clifton, N. J.

Bulletin, "Contact Protectors"

Contact Protector designates a new assembly of selenium rectifier cells in back-to-back arrangement in a tubular enclosure equipped with connection leads. The unit connects into a circuit containing relays and switches, such as those employed by telephone companies to control ac. to dc. circuits. The unit has negligible effect upon circuit operation.

It operates as a non-linear impedance in reverse direction. The cells, which acted as blockers when the contacts were closed, become a short circuit in the full voltage supplied across the backward connected cells when the contacts are opened. As a result, the voltage across the contacts does not rise to arcing potential.

Application can be made on equipment that draws as much as 600 ma. operating current to 150-volt ac. or dc. Larger applications can be handled by specially designed rectifier stacks of standard construction.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2472

Steel company saves time with a 10 hp Car Spotter.

Spot cars at a moment's notice with a LINK-BELT Car Spotter

ONE man and a Link-Belt Car Spotter can spot up to six loaded freight cars with ease. What's more, you reduce demurrage charges. Choose from a complete line of models—portable or stationary, with 5 or 10 hp integral or separate motors.

LINK-BELT CAR SPOTTERS

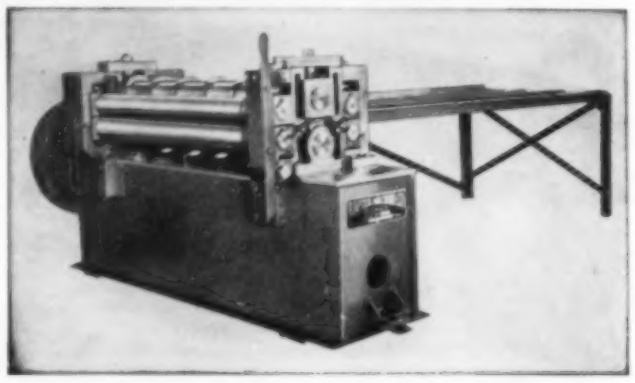
Write today for Book 2092 and get all facts on car spotters and drum type pullers.

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices in Principal Cities. 13,160

If you write maker identify as IEN - 2473

RAFTER GANG SLITTER

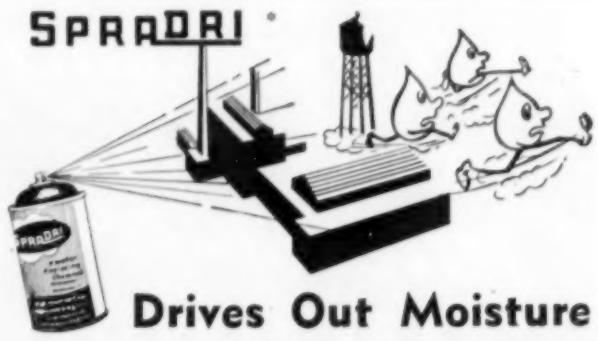
For Lasting Accuracy



With or without feed rolls for the slitting of varied widths and gauges of metal. Machined and accurately ground cutter shafts made of high-grade carbon steel. Machine cut gears. Generous size bearings. Vertical adjustment of upper spindles allows regrinding of double edge type cutters. By removing two bolts, the end housing is drawn from cutter shafts permitting quick change of cutters. Spacer collars machined and marked for particular job, easily and simply removed for change over of various slitting widths. All features represent accuracy, speed and economy.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street Belleville 9, N. J.
COLD ROLL FORMING MACHINES & PRESS BRAKE FORMING DIES

If you write maker identify as IEN - 2474



Drives Out Moisture and Wet..Stops Rust

On Damp or Wet Equipment. Even thoroughly soaked electrical or automotive equipment can be started in a few minutes after a SPRADRI application. SPRADRI penetrates every pore and crevice. Dries to a transparent film of molecular thinness and can be used on the most delicate instruments.

Stops Rust. SPRADRI stops rust instantly. This eliminates the necessity of dismantling and drying out complicated equipment. Ideal for tools, instruments, and appliances.

Protects for Months. One application of SPRADRI on wet or dry equipment prevents shorting-out or rusting for long periods.

SPRADRI is packaged in 12 oz. Aerosol containers. Send $2.95 for a trial can or write for Bulletin 3E.

*trade mark

SPRADRI COMPANY
332 Atando Ave. Charlotte, N. C.
(Chemical Division of Perfecting Service Co.)

If you write maker identify as IEN - 2475

NO LABOR COSTS– NO LABOR NEEDED!!

Let Clary record your production ...instantly, precisely, electronically!

Clary Electronic Scanning Counter (above) transmits any data to a remote, solenoid-operated Clary Digital Read-out Machine (below), only adding equipment of its kind to give you a printed tape, not a visual or uninterpreted reading.

NO HUMAN ERROR, no production slow-ups, when you put this Clary counting and recording team to work!

The Clary system delivers a continuous *printed* record of any assembly or production-line output, regardless of speed. Requires no operator or supervision. Also measures weight, bulk, or counts units in a package. Equipment is compact, fits anywhere — can even be located to count a *split* production run. Models to fit every need.

Follow the lead of other manufacturers who are saving considerable time, space and labor costs with Clary. Write us today for free literature and application information.

makers of the world's fastest and finest business machines

Clary Electronic Data Handling for Industry, Business, Research

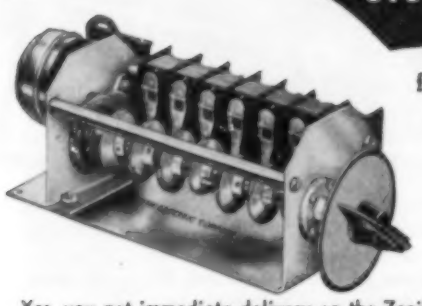
CLARY MULTIPLIER CORPORATION, Electronics Division, San Gabriel, California

If you write maker identify as **IEN - 2476**

NOW IS THE TIME

For Immediate Delivery....

The NEW **ZENITH** Multi-Circuit CYCLE TIMER



for ACCURATE TIME ON ALL YOUR ELECTRICAL OPERATIONS!

Yes, you get immediate delivery on the Zenith Multi-Circuit Timer . . . the unit that's specially designed to accurately, dependably time any operation. Thousands in use in hundreds of applications—for electrical display signs, industrial furnaces, electrical appliances, laundry equipment and dry cleaning equipment. The Multi-Circuit Cycle Timer and other Zenith units solve many laboratory timing problems. May be set for on and off periods with as many circuits as desired . . . can be furnished without synchronous motor for elevator control, limit switch and similar operations. Available now!

For full information and prices, send for illustrated Bulletin No. 142

See Classified Telephone Directory for Name of Local Representative.

ZENITH ELECTRIC CO.

146 W. WALTON STREET • CHICAGO 10, ILLINOIS

If you write maker identify as **IEN - 2477**

For BAKING, CURING, DEHYDRATING, etc.
on an efficient, production line level

An oven in days—not months

CHROMALOX *Electric* **RADIANT PANELS**

Ready to install, 1-ft. x 4-ft. and 2-ft. x 4-ft. pre-engineered Chromalox Panels generate intense, far-infrared energy to meet many processing and finishing heat needs. Tunnels in sizes to fit the work, can be quickly assembled in minimum space. Color-blind far-infrared radiation is absorbed efficiently by all colors and textures, can be controlled precisely, and gives other advantages possible with no other heat source!

Send For Bulletin CS-605

It gives details on pre-engineered Chromalox Electric Radiant Panels and shows how they meet your heat requirements.

Radiant Heat Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Tubular Heaters Advertisement, Page 5

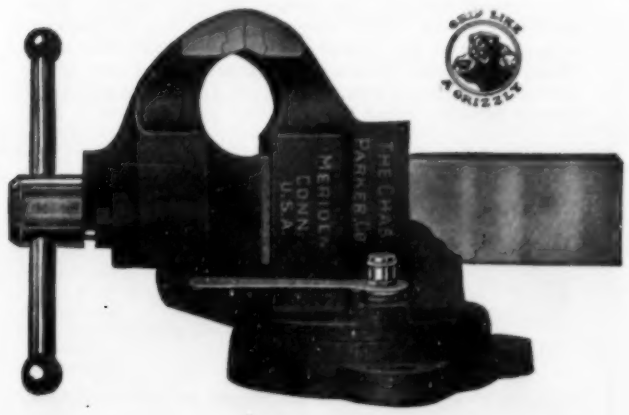
CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as **IEN - 2478**

PARKER VISES

STOCKED BY DISTRIBUTORS EVERYWHERE



The Complete Line

Write for Catalog

Machinists • Top Swivel Jaw
Combination Pipe • Hinge Pipe
Woodworkers • Utility

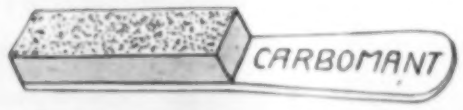
Sold Only Through Distributors

THE CHARLES PARKER CO., MERIDEN, CONN.

If you write maker identify as **IEN - 2479**

GRINDING . . Dressing stone to touch up cutting tools in a machine

Source: PFINGST & COMPANY
62 Cooper Square, Dept. IEN, New York 3, N. Y.



Subject to quantity discount

Carbomant trade names a new dressing stone mounted on a plastic handle to touch up the cutting edges of tools in place in a machine, particularly carbide tools. It applies also in deburring, resetting and correcting the edges of carbide cutters and to dress circular punches and other hardened tool edges in press tools.

The stone measures about 2½ by ¾ by ⅜ inch. Overall length of the handle is about 4½ inches. Four grit numbers, 100 to 400, range from coarse to extra fine. Colors identify each grit. List price is $8.50 each.

If you write maker identify as **IEN - 2480**

PLIER . . Long nose design made of spark-resistant Ampco bronze

Source: AMPCO METAL INC.
1745 S. 38th St., Dept. IEN, Milwaukee 46, Wis.

"Multi-Use" tool

This new plier has three characteristics to make it suitable for a range of applications. All are due to use of the company's Ampco Metal, a bronze alloy that is spark resistant, corrosion resistant and non-magnetic. The plier measures 6 in. in length. Its long nose design enables it to be inserted into confined locations. The metal has good structural strength.

If you write maker identify as **IEN - 2481**

SIGNALING . . Gas powered alarm sounds a fire warning at 140 deg. F.

Source: FYR-LARM COMPANY
243 Broad St., Dept. IEN, Summit, N. J.

About $16

Freon gas is held under pressure in the gray enameled 2-in. cylinder of this new alarm unit. The gas is released when ambient temperature reaches 140 deg. F. to operate a 5-in. horn mounted on the cylinder. The horn generates a 95-decibel scream that lasts for 5 min. minimum. Weight is about 4 pounds. The company offers to replace the unit without charge if it is set off in an actual fire.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2482**

FASTER, LOWER COST, BETTER Pipe Identification with

Brady Pressure-Sensitive Markers

You also get NEW *BLUE STREAK* RELEASE COATING
Positively eliminates tugging, twisting, tearing, distortion. Markers come right off the card for fastest peel to apply time, ever!

It's more efficient, safer, thriftier to mark *what* flows *where*—with Brady Pressure-Sensitive Pipe Markers. Off dispenser card in a hurry—on the pipe to *stay* and be *seen* . . . for real savings in material cost and application time. *Background color and legend-overprint combinations meet A.S.A. Standard A-13.* And Brady Markers are Silicone-coated to stay clean, highly visible. A wide assortment of standard markers—or we'll make any kind, with any legend, to your exact order! For *free* samples, useful literature, write—

W. H. BRADY COMPANY
701 W. Glendale Ave., Milwaukee 12, Wis.

BRADY NO. 1 NAME • NO. 1 SOURCE
Pressure-Sensitive Industrial Products

If you write maker identify as **IEN - 2483**

300 Bends Per Hour

with *NEW* Semi-Automatic

PINES BENDING MACHINE

SAVES TIME, CUTS COSTS ON SHORT RUN, PRODUCTION, MAINTENANCE WORK

SPECIFICATIONS
PINES SERIES 1400 BENDER
- Maximum Capacity—1" O.D. 16 ga. steel tube.
- Maximum Radius of Bend—8½" to centerline.
- Length of Tubes—Up to 5 ft. standard.
- Bending Speed—29 R.P.M.
- Working Height—35".
- Overall Size (Floor Space)—3' x 7'.
- Pressure—1000 P.S.I.
- Pump Motor—3 H.P.
- Pump—7 G.P.M. (Vickers).
- Optional—Adjustable gages . . . provision for any length of tube, mandrel for critical bends.

Fast, Easy to Operate—Forms Smooth, Neat Bends Quickly

Eliminates many slow, tedious hand bending operations. Is especially designed to cut costs on work formerly considered too variable for fully automatic equipment. Fast and easy for one man to operate. Hydraulic bending arm forms smooth, neat-looking bends quickly. Clamp and die rollers (or sliding dies) are operated by hand toggle levers. Hand wheel provides immediate angle-of-bend selection. *Typical production:* 300 bends per hour on 1"-16 gage steel tube.

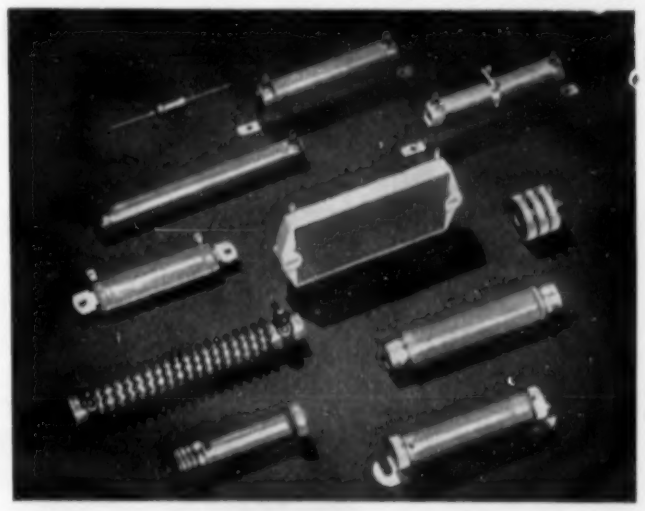
Ask for An Analysis of Your Bending Problems

Write today for free literature. Find out how a Pines Bender can be applied to your work. *Ask for an analysis of your bending problems.* There's no obligation.

PINES ENGINEERING CO., INC.
Specialists in Tube Fabricating Machinery
BENDING • DEBURRING • FLANGING • THREADING MACHINES

635 WALNUT • AURORA • ILLINOIS

If you write maker identify as **IEN - 2484**



Get the right resistor!

• You'll be most likely to find it among Ward Leonard's dependable Vitrohm resistors — the most complete line ever offered by any manufacturer. Write for 64-page free catalog to Ward Leonard Electric Company, 33 South St., Mount Vernon, New York.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RHEOSTATS • RELAYS • MOTOR CONTROLS • CHROMASTER

If you write maker identify as **IEN - 2485**

WATCH OUT for the WATT-HOG

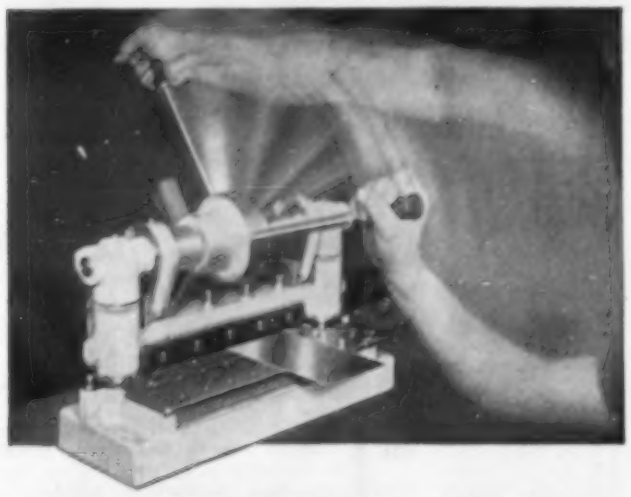
Does this *Watt-hog* with his dim and dirty face root you out of good light and decent maintenance economy? Not if you follow the suggestions in the *Champion Maintenance Manual and make a practice of buying the right lamps — efficient, long-lasting *Champion Lamps*.**

**Your name and company address on a postcard will bring you a free copy by return mail.*

CHAMPION LAMP WORKS
600 Broad Street, Lynn, Massachusetts

CHAMPION lamps

If you write maker identify as IEN - 2486



Want PRECISION SHEARING at *HIGH SPEED?*

Here's Why You'll Want a Versatile DI-ACRO SHEAR

- **PRECISION**—strips less than .025" wide accurately sheared, parts exactly duplicated.
- **CUTTING SPEED**—rivals that of power machines.
- **RATED CAPACITY**—16 gauge.
- **EASY TO OPERATE**—a woman can operate it.
- **PORTABLE**—easy to move.
- **FOUR MODELS**—6 to 24 inches wide. Four power models.
- **ENGINEERING SERVICE**—always at your disposal.
- **RUGGED**—one year warranty.
- **DELIVERY**—excellent.
- **COST**—that's good too.

See Di-acro Exhibit—Booth 1403 A.S.T.E.—Philadelphia, April 26-30

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MFG. COMPANY
318 8th Ave. Lake City, Minn.

If you write maker identify as IEN - 2487

"See? I *told* you we should have used KEY GRAPHITE PASTE!"

The perfect sealer for pipes carrying high-pressure steam, gas or oil.

Write for FREE sample

SEALS TIGHT... BREAKS RIGHT!

A Product of KEY COMPANY

2651 McCasland • East St. Louis, Illinois

If you write maker identify as IEN - 2488

this book shows you how to Reduce machine noise and vibration 60-85%.

Avoid floor drilling by mounting machines the modern way, without bolts or lag screws.

Reduce maintenance costs by eliminating transmitted vibration which damages machines, floors and buildings.

Save time and money when installing new machinery or repositioning present machinery.

Write today for your free copy of "Why It Pays To Anchor Your Machines With UNISORB."

THE FELTERS COMPANY
208 South Street, Boston 11, Massachusetts

UNISORB® MOUNTINGS are used with our special adhesive. UNISORB is also available precoated with adhesive, for use with machines that do not require shimming.

If you write maker identify as IEN - 2489

TESTING . . Oscilloscope to read dc. pulse signals directly

Source: WATERMAN PRODUCTS CO.
2473 Emerald St., Dept. IEN, Philadelphia 25, Pa.

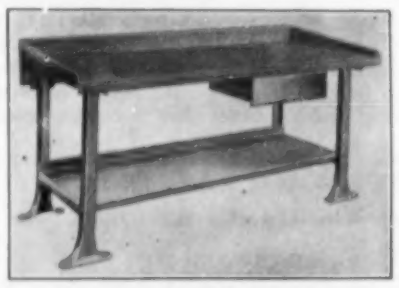
For lab and field use

Pulsescope designates this new instrument in the company's electronic line for instantaneous direct reading dc. calibration of either positive or negative signals. Vertical amplifier sensitivity is 9.2 volts rms/inch. Repetitive or trigger sweep is variable from 5 cycles to 500 kc. with 5X sweep expansion. Sweep, marker and dc. calibrating voltage can be provided externally. The instrument operates in a frequency of 50 to 400 cycles at 110-volt ac. The assembly measures 8½ by 13¾ by 6¾ inches. It weighs 22 pounds.

If you write maker identify as IEN - 2490

FURNITURE . . Steel work bench with Masonite finished top surface

Source: INDUSTRIAL BENCH & EQUIPMENT MFG. CO.
98 South St., Dept. IEN, New Britain, Conn.



Available from stock

Delicate and precision work, requiring a bench with a semi-soft top, can be handled on this new Masonite surfaced steel unit Series 1900. The Masonite is ⅛ in. in thickness. It is adhered to the top with a special adhesive known as D-253, characterized by its ability to hold the top in place against weathering, aging and contact with water and oil.

The steel is turned down at the rear to add rigidity to the construction. The legs are made of formed sections in welded assembly and are secured to the top by bolts. Back plates, end plates, shelves and drawers are subject to order.

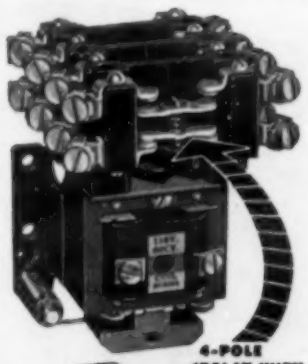
If you write maker identify as IEN - 2491

Strip-Grip is a new non-glazing rubber roll compound to surface metal rolls employed in continuous strip processes such as electrolytic tin plating, annealing, galvanizing. The compound presents a smooth regular ground surface. It does not wear off and retains its gripping characteristics so it will not slip and produce "fogging" of highly finished steel strip. The material is available from B. F. Goodrich Co., 450 So. Main St., Dept. IEN, Akron 11, Ohio.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2492

Bulletin 700 UNIVERSAL SOLENOID RELAY



4-POLE RELAY WITH UNIVERSAL CONTACTS

Change from NORMALLY OPEN Contacts to NORMALLY CLOSED Contacts by Simply Shifting Connections

The Allen-Bradley Bulletin 700 universal solenoid relays are a new idea in relay design. The new dual contact arrangement permits quick change from normally open contacts to normally closed contacts by simply shifting connections . . . a simple and easy operation. Only ONE moving part. Rating of 10 amperes at voltages up to 600 volts. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wisconsin.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

If you write maker identify as IEN - 2493

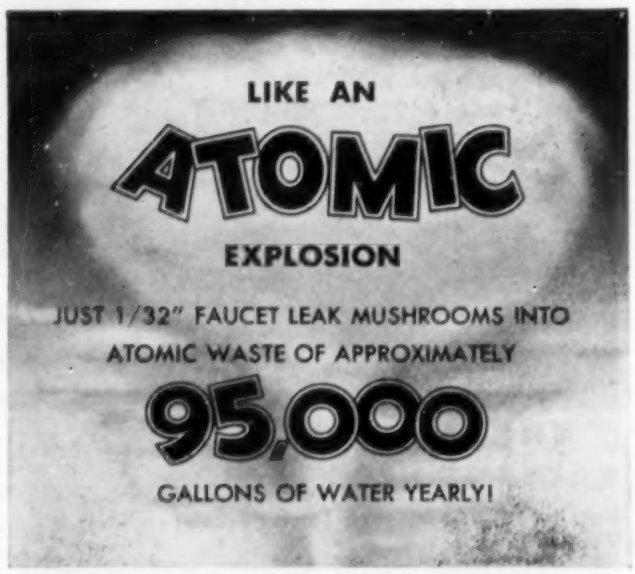
Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-3.

L. B. FOSTER CO.
CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 2494



Cost of wasted water @ $1.90 per M. cu. feet is $24.14. If the leak is in a hot water faucet then fuel cost for heating this wasted water will be: $88.91 if coal (9,870 lbs.)†; $91.08 if oil (798 gals.)†; $84.41 if gas (84,411 cu. ft.)†. These figures authenticated Hackensack Water Co.* and American Gas Association†.*

you can stop this needless waste now with Pat'd

'SEXAUER' "EASY-TITE" Faucet Washers

THE ONLY WASHERS BUILT LIKE A TIRE WITH FIBERGLAS RE-ENFORCEMENT

Fiberglas, with a melting point 1200° Fahrenheit, is unaffected by destructive heat of modern superheat water systems; has a tensile strength of 460 pounds per square inch; is non-absorbent and resists all chemicals.

'Sexauer' "Easy-Tites" outwear ordinary washers 6 to 1! ...Now available with a greatly improved special duPont COMPOUND which adds substantially to longer, trouble-free washer service. This COMPOUND keeps washer from going to pieces under extreme hot water, withstands impurities and has superior tensile strength. 'Sexauer' "Easy-Tites" won't spread, split or "mush-out." They outlast all other washers by 6 to 1; save labor on 5 REPEAT REPAIRS, water and fuel and prolong fixture life.

Send for your

Free Catalog!

For water savings, lower maintenance and fuel costs, write for new Edition H. 'Sexauer' "Easy-Tite" washers just one in over 3,000 TRIPLE WEAR plumbing repair parts and tools. It's today's accepted guide for purchasing and maintenance men in thousands of PLANTS, INSTITUTIONS, AND GOVERNMENT AGENCIES that rely on 'Sexauer' repair materials.

'Sexauer' Maintenance Engineer at your service

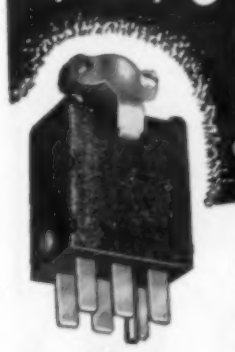
There's a 'SEXAUER' TECHNICIAN within your quick call who offers a special SURVEY SERVICE that sets up schedule of exact replacement parts for your plumbing regardless of make or age. A postcard will bring him and your NEW catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K-34.
2503-05 Third Avenue, New York 51 *as advertised in THE SATURDAY EVENING POST*

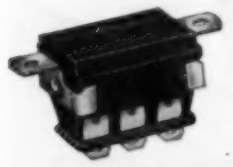
SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 2496

FOR PUBLIC ADDRESS, RADIO, and kindred fields, specify JONES 400 SERIES PLUGS AND SOCKETS of proven quality!



P-406-CCT



S-406-AB

Double Contact Area

Phosphor bronze knife-switch socket contacts engage both sides of flat plug contacts.

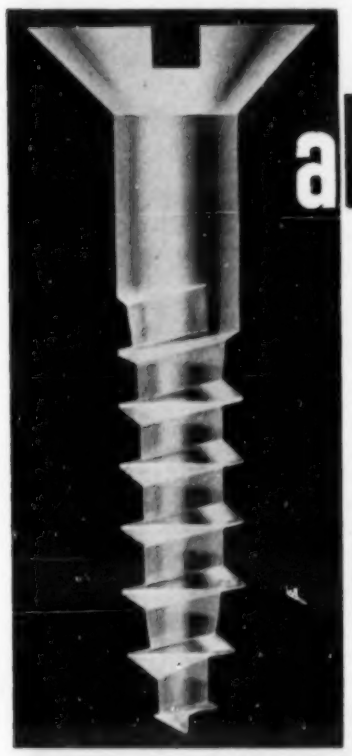
Socket contacts phosphor bronze, cadmium plated. Plug contacts hard brass, cadmium plated. Insulation molded bakelite. Plugs and sockets polarized. Steel caps with baked crackle enamel. 2, 4, 6, 8, 10, 12 contacts. Cap or panel mounting.

Information on complete line, in Jones Catalog 18: Electrical Connecting Devices, Plugs, Sockets, Terminal Strips. Write

Jones

HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

If you write maker identify as IEN - 2497



aluminum

WOOD SCREWS

In All Standard Sizes
Phillips or Slotted
Flat Round Oval

Corrosion resistant Lasting beauty

Packed for protection
Shipped in indestructible cans with sealed locking tops.

Lubricated Free
Southern Screws in bulk lubricated free upon request.

Shipped Promptly
"Special" screws may be standard in the 600,000,000 Steel, Brass, Silicon Bronze, Aluminum and Stainless Steel Wood Screws waiting at Southern.

Write us your requirements
Samples and catalogues upon request: Box 68-E

SOUTHERN SCREW COMPANY
STATESVILLE, N. C. • MANUFACTURER OF WOOD SCREWS
Factory Warehouses: North Bergen, N. J. Chicago 10, Illinois
Los Angeles 23, Calif.

If you write maker identify as IEN - 2498

When it has to Run for Years and Years

WITHOUT FAILURE

MAKE IT A LEIMAN VACUUM AND PRESSURE PUMP

Leiman users say this:
"Almost continuous operation, 24 hours a day for 21 years"
"Using Leiman pumps on 350 machines. No pump has given a moment's trouble"

4-WING TYPE. Vacuums to 20"; pressures to 15 lbs.; displacement to 162 cfm. Wings take up their own wear, insure positive pressure or vacuum.

2-WING TYPE. Vacuums to 29.9"; pressures to 25 lbs.; displacement to 40.8 cfm. Automatic wing adjuster forces steel blades to meet cylinder wall, no sticking.

Write for 16-page catalog and blueprints of typical applications on Leiman rotary positive pumps—choice of industry since 1889.

SEE OUR CATALOG IN SWEET'S FILE

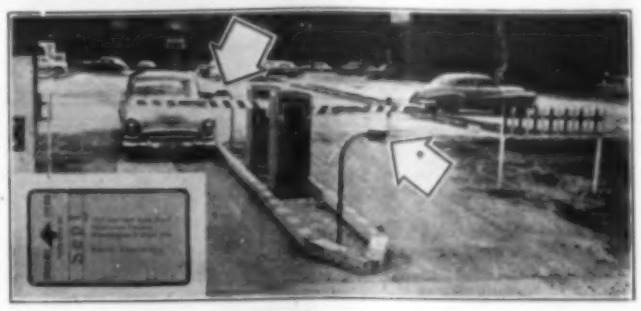
LEIMAN BROS., INC.

166 Christie Street, Newark 5, N. J.

If you write maker identify as IEN - 2499

STORING . . Parking lot control uses authorized cards to operate gates

Source: PARKING CORP. OF AMERICA
33 N. La Salle St., Dept. IEN, Chicago 2, Ill.



New "key" combination each month

Parcoa trade names a new assembly of electronically controlled gates and "key" operating cards at the entrances and exits in a parking lot. The cards are issued with a new key each month. An individual holding a card drives to a receiving station in front of the gate. He inserts the card in this station and the gate rises to admit him to the lot or permit him to leave it. He rides over an operating mechanism that closes the gate behind him.

The equipment was developed for use by companies to control their parking lot facilities and permit entry only to authorized persons. It also is offered for use by commercial parking lots where a monthly fee is paid for the card. The original design is by Johnson Farebox Company which has specialized in revenue collecting systems since 1900.

If you write maker identify as IEN - 2500

GAGE . . Pneumatic electronic, measures and code stamps work pieces

Source: FEDERAL PRODUCTS CORP.
1144 Eddy St., Dept. IEN, Providence 1, R. I.

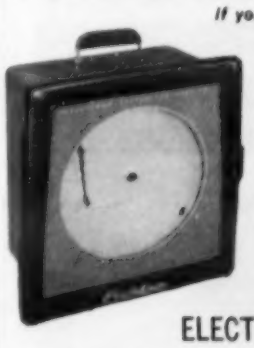
Sorts for assembly

The operator of this new combination gaging equipment positions work pieces one at a time on a Dimensionaire pneumatic plug and rotates the work to find the smallest inside diameter. The size signal thus obtained is "stored" in a 17-stage electronic classifier and the work piece is removed from the plug and slid into a companion stamping unit. An air operated hammer in this unit swings down to code mark it according to the "stored" signal and a timer resets the gage for the next piece.

The gage can be adapted to measure and mark the inside diameters of castings, housings, plates, motor blocks. It can be designed for automatic feed and disposal of work that lends itself to the automatic operation. Any number of air plugs can be used to gage different inside diameters. The gage also is suited to find out-of-round, taper, bellmouth, hourglass defects. Speed depends upon the operator who manually sorts the work pieces according to classifier lights or the stamped markings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2501



Fielden tektolog

ELECTRONIC RECORDER

- *Accurate to ±1% of Full Scale*
- *Simplified Design—Only 4 Principal Units*
- *Operates directly from Low Energy Sources*
- *Available with Electric or Pneumatic Controls*

The Fielden TEKTOLOG has a sensitivity of ±0.1%, mechanical reproducibility of ±0.5%, yet because of its simplified design, circuitry and construction is priced substantially lower than other types. Various recording speeds to suit applications. Pen equipped with non-clogging capillary tip suitable for high or low speed recording. High torque drive permits use of auxiliary control apparatus. Available with dust-tight, weather-proof cast aluminum housing. Easily installed . . . flush or surface mounted. Can be supplied in portable carrying case for mobility. Designed for *accurate* recording at low cost. Write today for details to **Dept. E.**

Fielden

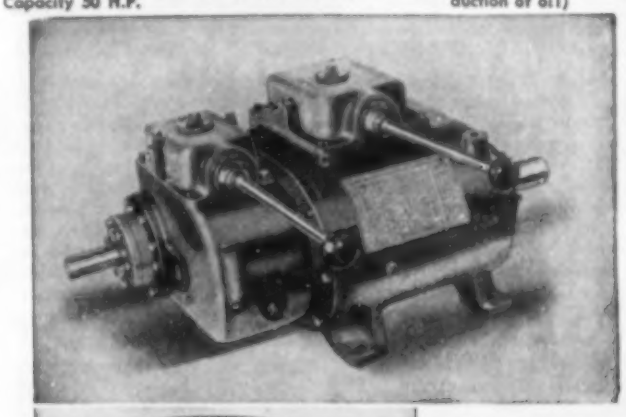
INSTRUMENT DIVISION
ROBERTSHAW-FULTON CONTROLS COMPANY
2920 N. 4th St., Philadelphia 33, Pa.
Dollar for Dollar—Your Best Instrument Value

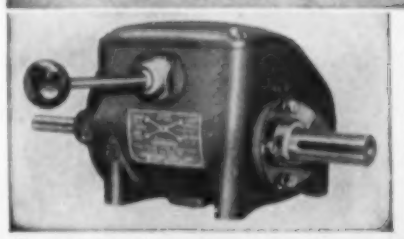
If you write maker identify as IEN - 2502

WESTERN "SUPER" with 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. Capacity 50 H.P.

in geometric progression of 1.29 (total reduction of 6:1)





(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever automotive type.

Ratios — 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys, and motors from stock.

up to 100 h. p.
For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Roll Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO., 2400 SCOTTEN, DETROIT, MICHIGAN

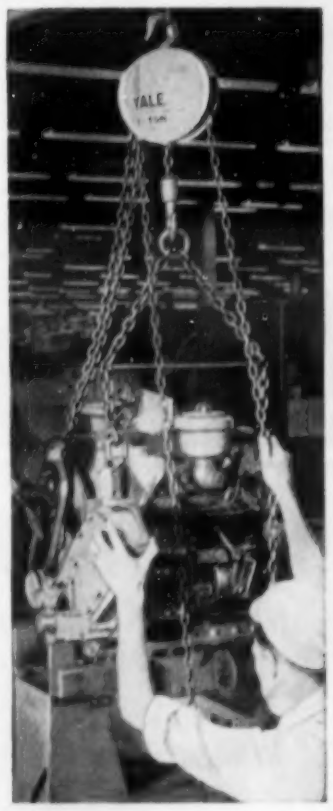
If you write maker identify as IEN - 2503

Lifts more...lasts longer... costs less to service and maintain

THE YALE LOAD KING HAND HOIST IS TRULY THE FINEST OF ITS TYPE

QUICK FACTS ABOUT THE LOAD KING HAND HOIST

- Capacities ½ to 2 tons
- Lightweight...easily portable
- Quality aluminum alloy castings & alloy steels throughout
- Fast...lifts 4000 lbs. 2.1 ft. in 60 seconds
- One-piece housing protects all operating parts
- Precision ball bearings on all rotating shafts
- Exclusive Synchro-Matic Load Brake automatically keeps load suspended between pulls
- Fractureproof steel Safety Hooks...top and bottom



YALE*

INDUSTRIAL TRUCKS AND HOISTS

*Reg. U. S. Pat. Off.

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 363A
Roosevelt Boulevard, Phila. 15, Pa.

Please send me my FREE copy of the *Yale Hoist Users and Buyers Guide.*

Company_____
Name_____ Title_____
Street_____ City_____ State_____

In Canada write: The Yale & Towne Manufacturing Company
St. Catharines, Ontario, Canada

Gas, Electric, Diesel and LP-Gas Industrial Trucks • Worksavers
Hand Trucks • Hand and Electric Hoists • Pul-Lifts

If you write maker identify as IEN - 2505

Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

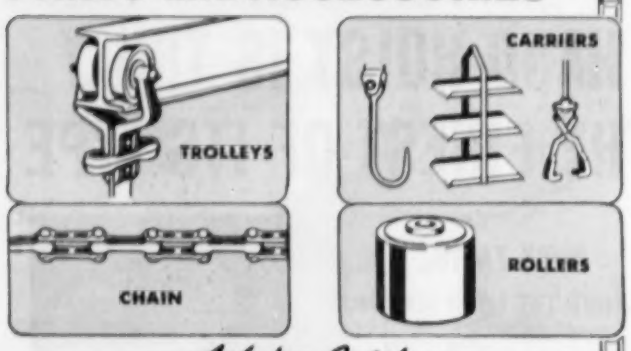
THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN - 2506

WEBB

CONVEYOR EQUIPMENT, PARTS and ACCESSORIES



Ask for Catalogs

No. 50—Trolley Conveyors
No. 51—Floor Type Conveyors
No. 52—Power & Free Conveyors
No. 453—Hand Pushed Trolleys, etc.

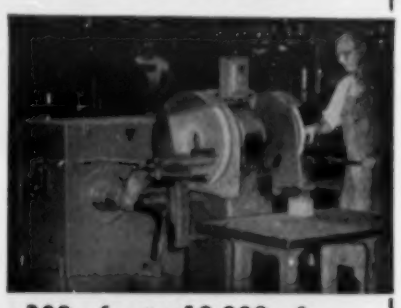
JERVIS B. WEBB CO.
Conveyor Engineers and Manufacturers
8915 ALPINE AVE. • DETROIT 4, MICH.
Offices In Principal Cities

If you write maker identify as IEN - 2507

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.



DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

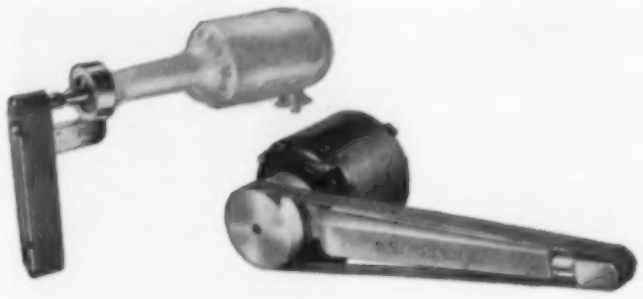
Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 2508

GRINDING . . Spindle attachment applies abrasive belt on motor or tool

Source: UNITED MACHINE TOOL CO.
1903 Clyde Park Ave., Dept. IEN, Grand Rapids 9, Mich.



The belt does a smooth job

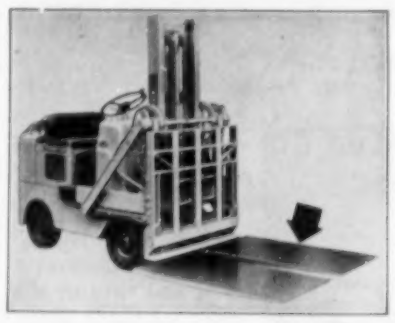
Burring, grinding, polishing operations can be performed on inside and outside surfaces by these new attachments. They mount abrasive belts on a portable electric or pneumatic tool or on the spindle of a small motor. The former takes a 12 by 1-in. belt, weighs 5 lb. and lists at $33. It is designed particularly for use on a Dumore hand grinder.

The latter is complete with a ½-hp. motor for operation at 3,450 rpm. on 110-volt ac. including the attachment frame and a 1 by 42-in. belt. It is Bench Model B-421 and lists at $119.

If you write maker identify as IEN - 2509

TRUCK . . Push-pull attachment and spade forks for sheet pallet loads

Source: TOWMOTOR CORPORATION
1226 E. 152nd St., Dept. IEN, Cleveland 10, Ohio



Handles unit loads

Thin edged spade like forks apply on the standard forks in this new Two-Loader attachment. They operate in connection with the company's hydraulic push-pull frame, previously described IEN-9920-52.

The forks can be pushed under a pallet sheet or the push-pull attachment can be moved forward to pull the load into place. At the point of unloading, the pusher removes the load and the pallet sheet. The new assembly makes it possible to replace fork entry pallets with inexpensive sheets that need not be returned to the shipper.

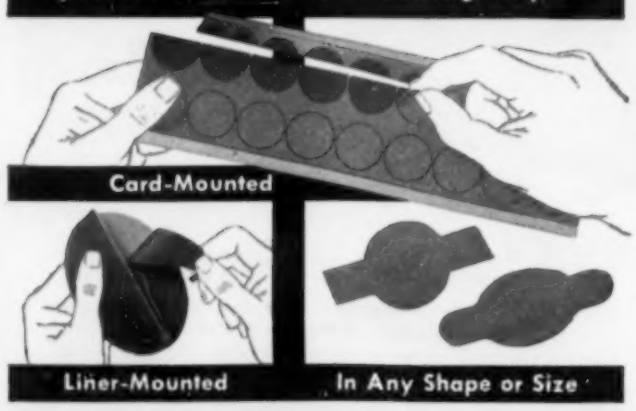
If you write maker identify as IEN - 2510

Dairi-Mart is a new coin operated dispenser that encloses three sections, each independently operated, to hold containers of milk, chocolate, orange drinks. A lever is pressed, after a coin is inserted, and the selected container of either a half-pint, ⅓ quart or pint drops out to a pocket near the bottom of the rectangular housing. Capacity is 120 to 156 containers, depending on the make. A red light indicates a sold out compartment and a mechanism returns the coins. Manufacturer is Cedar Hill Farms, Inc., Dept. IEN, Cincinnati 27, Ohio.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 2511

Save Real Money! Use Brady PRE-CUT pressure-sensitive masking tapes



For spraying—sealing—protecting—sand blasting—stenciling. Faster application. Uniformly accurate masking. *No tape waste!* Heat resistant to 300°. . . no residue. Hundreds of shapes and sizes in stock. Specials custom cut to your exact specifications from the tape of your choice. For *free* samples, useful literature, write

W. H. BRADY COMPANY
706 W. Glendale Ave., Milwaukee 12, Wis.

NO. 1 NAME
NO. 1 SOURCE
BRADY Pressure-Sensitive Industrial Products

If you write maker identify as IEN - 2512

CESCO *RIGHT... before your Eyes!*

Send TODAY for CESCO literature

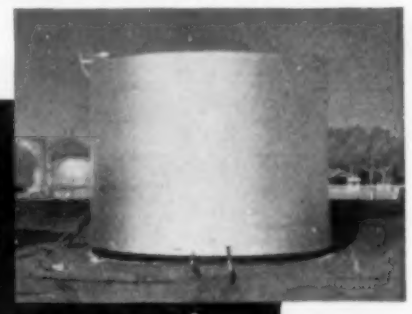
CHICAGO EYE SHIELD COMPANY • 3326 Warren Boulevard, Chicago 12, Illinois

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Dallas, Detroit, East Orange, Houston, Indianapolis, Kansas City, Knoxville, Little Rock, Los Angeles, Louisville, Mexico City D.F., Milwaukee, Montreal, Peoria, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa, Wichita

If you write maker identify as IEN - 2513

Storage Tanks for every need



The steel storage tank shown above is one of the many types of welded steel plate structures we build. We also design, fabricate and erect elevated water tanks, reservoirs, pressure storage tanks and heavy steel plate work.

Write our nearest office for quotations on any tank or steel plate work you contemplate installing. State type, size, capacity desired and location.

Above: 24,000-barrel Horton® cone-roof oil tank at Bakersfield, Calif.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois

Atlanta • Birmingham • Boston • Cleveland • Detroit
Houston • Los Angeles • New York • Philadelphia • Pittsburgh
Salt Lake City • San Francisco • Seattle • Tulsa

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA

If you write maker identify as IEN - 2514

PICK-UP NAILS etc., with the

New SERIES 70 MULTIFINISH HAND MAGNETOOL

• EASY TO OPERATE
• LABOR and MATERIAL SAVER

for Rapid and Convenient Pick-up of small parts, nails, etc.

• PERMANENT • NON ELECTRIC • NO BATTERIES •

MODEL 71
9" x 5" x 1⅜"
Picks up 2-3 lbs.
$19.75

MODEL 72
9" x 5" x 3⅜"
Picks up 4-5 lbs.
$38.00

MODEL 74
9" x 5" x 6⅛"
Picks up 8-9 lbs.
$75.00

10 DAY FREE TRIAL

Other Products . . .
Rotary Floor Sweepers
Tank Rotaries
Magnetic Tools

. . . Separates steel parts from non-ferrous metals . . . Eliminates steel particles from chemicals, food, textile fabrics . . . Removes heat treated parts from carburizing material . . . Draws steel parts from tumbling material . . . Increases efficiency in the handling of extremely hot or cold parts.

MAGNETOOL®
Division of MULTIFINISH MFG., CO.
26341 W. 8 Mile • Dept. 392 • Detroit 19, Mich.

If you write maker identify as IEN - 2515

Air Conditioners Will Help You Add-Up More Profits

By making your staff more alert, and more loyal. You will attract more customers and more trade.

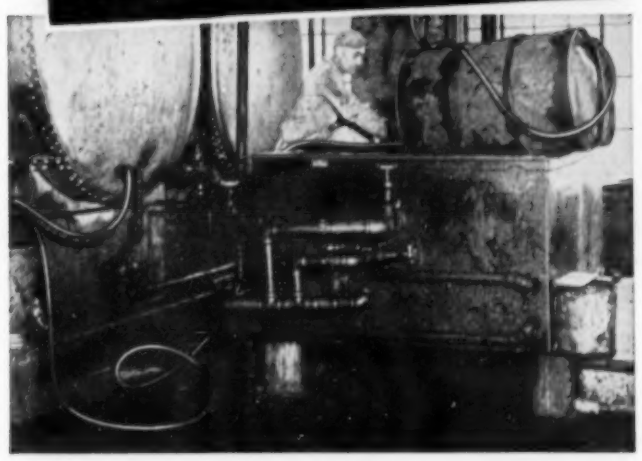
Frick air conditioning, whether as a packaged unit or a central system, will bring you these and other advantages. Our engineers are unbiased in recommending the equipment you need: we make both units and custom-built systems.

Get an estimate from your nearest Frick man, or write for Bulletin 522. Be ready to add to your profits when warm weather hits!

FRICK CO. WAYNESBORO, PENNA.

If you write maker identify as IEN - 2516

Better rubber products are made with Du Pont NEOPRENE



Neoprene steam hose outlasts others 10 to 1 . . . still intact after year's exposure to grease

Premature failure of steam hose was causing costly shutdowns in the drum-cleaning operations of a grease-refining plant. Within a few weeks, the penetrating action of animal fats and vegetable oils softened hose covers . . . made it easy for steam at 25 psi to escape. Replacements were frequent, until a hose made with tube and cover of neoprene was installed.

After a full year, the neoprene steam hose was still on the job—*over ten times longer than other hoses!* During that period, the hose had often been completely immersed in grease . . . twisted and scuffed in round-the-clock service. Still the tough neoprene cover and heat-resistant neoprene tube showed no signs of deterioration. Downtime due to hose replacements was practically eliminated, and drum-cleaning efficiency increased 30% as a direct result.

Longer service life and lower maintenance costs are typical of the benefits thousands of neoprene products are bringing industry today. Although Du Pont makes no finished goods of neoprene, your supplier of rubber goods will gladly tell you about the neoprene products he sells.

FREE! THE NEOPRENE NOTEBOOK

Each issue describes new neoprene products . . . improved old products . . . tips on reducing maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Div. IE-3, Wilmington 98, Delaware.

NEOPRENE

The rubber made by Du Pont since 1932

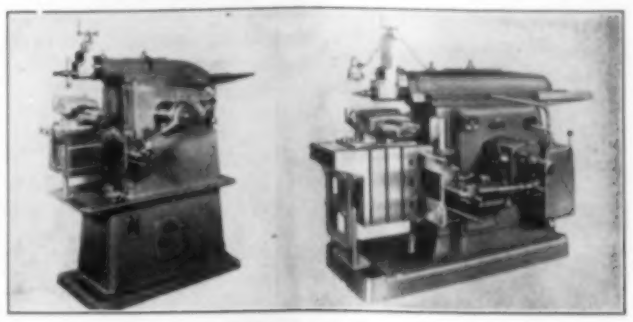
DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

If you write maker identify as IEN - 2518

SHAPING . . Prema and VMA machines for tool room and production use

Source: AUSTIN INDUSTRIAL CORP.
P. O. Box 430, Dept. IEN, White Plains, N. Y.



Made in Sweden

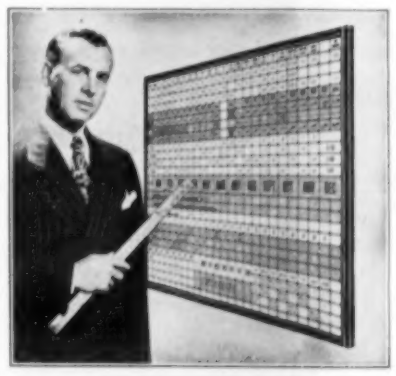
Prema Model 02 and Types E and ES VMA, plain and universal shapers, are now available in the United States. The Prema shaper is made with a 10, 11 or 13-in. stroke and in a range of six ram speeds between 30 and 150 strokes per minute. There also are six power feeds. Drive is by V-belt and a 2-hp. motor enclosed in the housing and operating through a friction clutch. This machine is suited for tool room, laboratory and small part production work.

Type E VMA utility shaper is made with 14, 18 and 22-in. strokes with six ram speeds and four power table feeds. Type ES VMA is made in 18, 22 and 26-in. strokes with eight ram speeds and ten table feeds. Drive to the gear box is by V-belt from a motor mounted in the base. All of the machines are furnished with English scales and dials. Replacement parts are carried in stock in the United States.

If you write maker identify as IEN - 2519

RECORD KEEPING . . Visual board accumulates data for production control

Source: GRAPHIC SYSTEMS
55 W. 42nd St., Dept. IEN, New York 18, N. Y.



Boardmaster Bulletin

The company announces availability of custom sizes both larger and smaller than its 38½ by 24 in. record keeping board, previously described IEN-6912-51. Boardmaster is the trade name. Each board is made of aluminum with small grooves stamped through the metal at equal distances to hold cards that snap in and out in horizontal and vertical columns. A typical arrangement is illustrated.

The board takes individual cards measuring 1⅜ by ⅞ in., or multiples of this size, to set up operations against dates, jobs, quantities in stock, other variables, to record progress and indicate activity in relation to a predetermined schedule. The standard board lists at $49.50 including a supply of the cards. A 24-page illustrated booklet is available. It illustrates and explains the operation under various conditions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 2520

If you write maker identify as IEN - 2521

Do the job BETTER with SQUARE D Pneumatic Timers

Whether your requirements call for A.C. or D.C., these Square D design features deliver the most in consistent and accurate performance

Wide Range • Time delay period easily adjusted over a period of 0.2 seconds to 3 minutes in an infinite number of steps.

Easy Adjustment • Finger tip adjustment of timing period can be made simply by rotating a knurled knob or a micrometer dial.

Repeat Accuracy • Less than 10% variation from the mean timing period. Accurate timing, even under abnormal ambient temperature conditions.

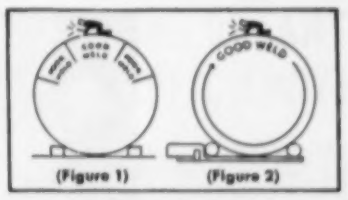
Write for Bulletin 225. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin

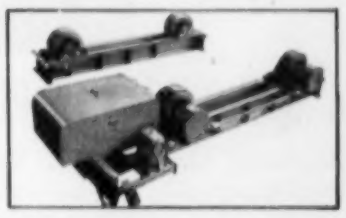
ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 2522

How Worthington Turning Rolls insure BETTER WELDS





Designed for use in welding cylindrical vessels of any size, Worthington Turning Rolls will insure the best possible weld while lowering costs and increasing footage up to 50%.

The above sketches show how. Unless work is turned continuously, good downhand welding is obtainable only in a small area (Fig. 1). With a Worthington Turning Roll, downhand welding is assured for the complete circumferential seam (either by manual or automatic welding) (Fig. 2).

Write for Bulletin 228-A, Worthington Corporation, Positioning Equipment Div., Plainfield, New Jersey. Y.2.2

WORTHINGTON

Welding Positioners—Turning Rolls

If you write maker identify as IEN - 2523

versatile OKOLITE-OKOPRENE cables

. . . UNDERGROUND, IN CONDUIT, AND OVERHEAD

Okolite-Okoprene cables were installed recently in a large paper mill to handle the power and control circuits for a Kaymr Pulp Drying Machine. Leads for the synchronized generators, for motors and circuit breakers, the self-supporting aerial cables from substations to the power house, as well as pushbutton station and lighting system wiring, were all Okolite-Okoprene.

Okolite-Okoprene cables are highly resistant to all attacking elements. They may be used in wet, dry, hot or cold locations, underground or in conduit. Write for Bulletin IE-1053 for full information. The Okonite Company, Passaic, N. J.

1743

OKONITE insulated cables

If you write maker identify as IEN - 2524

Model "SP" ROTARY
Alaska Gray and Seal Brown

The DURANT "SP" Predetermined Counter

(CLOSES SWITCH AT END OF PRE-SET COUNT)

PREVENTS COSTLY OVERRUNS

This SMALL, COMPACT Productimeter has hundreds of applications in all phases of industrial production. Make exact production runs to any predetermined count you set.

Extremely rugged, fast and accurate the "SP" Productimeter will eliminate wasteful over- or under-runs. It will turn on a light, ring a bell or stop the machine. Available in ROTARY or STROKE models.

Send for Catalog No. 501

DURANT MANUFACTURING CO.
1930 N. Buffum St., Milwaukee 1, Wis.
130 S. Water St., Providence 3, R. I.
Representatives in Principal Cities

PRODUCTIMETERS 75th ANNIVERSARY
Count Everything

If you write maker identify as IEN - 2525

A GRINDING AND POLISHING UNIT!

As shown here, the 6-72 Vonnegut Abrasive Belt Unit is set up as a *lathe attachment* for cylindrical grinding and polishing. The same basic unit can be used as a floor stand and also as a *swing machine.* But that's not all—it has proved its value as a grinding and polishing unit for special machines, and as an attachment for other machines. There is the possibility that it can be used for an entirely new application in *your* plant. If you find that possibility, write us about it—we'll be glad to help you work out the details. Send for Bulletin No. 62.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D WINTHROP AVE., INDIANAPOLIS 5, IND., U. S. A.

If you write maker identify as IEN - 2526

"EXTERNAL" TYPE
Finds grounds, shorts and open circuits *in seconds* in armatures 2" to 8" in diameter. Prods and meter eliminate guesswork.
$46.00 (Also available without meter)

"INTERNAL" TYPE Locates coil shorts instantly and positively in stators 6" and up, or armatures and rotors 6" to 14". Direct meter indication.
$41.50

PRICES F.O.B. WOODSTOCK, ILL. — PRICES SUBJECT TO CHANGE WITHOUT NOTICE. STATE OR LOCAL TAXES EXTRA.

CROWN INDUSTRIAL PRODUCTS COMPANY
715 Amsterdam Street, Woodstock, Illinois

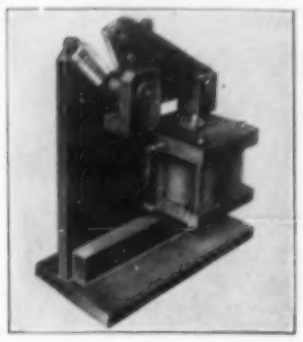
Ship _____ (quantity)
- ☐ CROWN "Internal" Type Growler(s)
- ☐ CROWN "External" Type Growler(s)
- ☐ Check enclosed
- ☐ Send on P.O. No._____
- ☐ Send Catalog data only

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ZONE_____STATE_____

If you write maker identify as IEN - 2527

SHEARING . . Hot bar cutter operated by pressure in air cylinder

Source: CURRY AIR SHEAR CORP.
941 Oliver Bldg., Dept. IEN, Pittsburgh 22, Pa.



Air at 60 to 100 pounds

Hot bars, ferrous or nonferrous, can be cropped in merchant and bar mill operations with this new Type-B Air Shear. The alligator type machine employs a pneumatic cylinder beneath its pivoted head to operate the shear blade attached to the head. The machine measures 16 by 33 in. at the floor. It weighs about 1,500 pounds.

Lubrication is supplied through a single Alemite fitting in the main pivot pin. The two knife blades are reversible and turnable so each of their four cutting edges can be used in rotation before sharpening is required.

If you write maker identify as IEN - 2528

SCREEN . . Woven wire cloth with extra wires along the side edges

Source: WICKWIRE BROTHERS INC.
187 Main St., Dept. IEN, Cortland, N. Y.

Sample piece upon request

Five extra strands of wire are woven in with the first five wires along the longitudinal edges of the company's Cortland Brand Gray-Wick insect wire screen. The new construction, known as Multi-Wire Edge, holds the screen flat when it is unrolled, assists in cutting, handling and installing, adds strength and rigidity on the side tacking surfaces. The screen is available in 18 by 14 mesh and in nine widths, from 24 to 48 in., from stock. Standard length in rolls is 100 feet. Special widths are available to order.

If you write maker identify as IEN - 2529

PAINTING . . Pneumatic pump delivers paint from original container

Source: SILVER-KING CORPORATION
Dept. IEN, Aurora, Ill.

Immediate delivery

Two aluminum plates, with hinged tie rods, are assembled with a pressure regulator, gage, safety valve and air operated agitator mechanism to make up this new paint pump. The plates apply top and bottom on a 5-gal. paint container to stir the paint and provide air pressure from a shop source at about 10 pounds. The pressure delivers the paint to standard spray equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2530

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1⅛", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins, for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to **Mathewson Machine Works,** 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN - 2531

FREE BULLETIN

Shows how to
- ★ Save time
- ★ Save floor space
- ★ Reduce handling costs

WITH

NUTTING JACKS and SKIDS

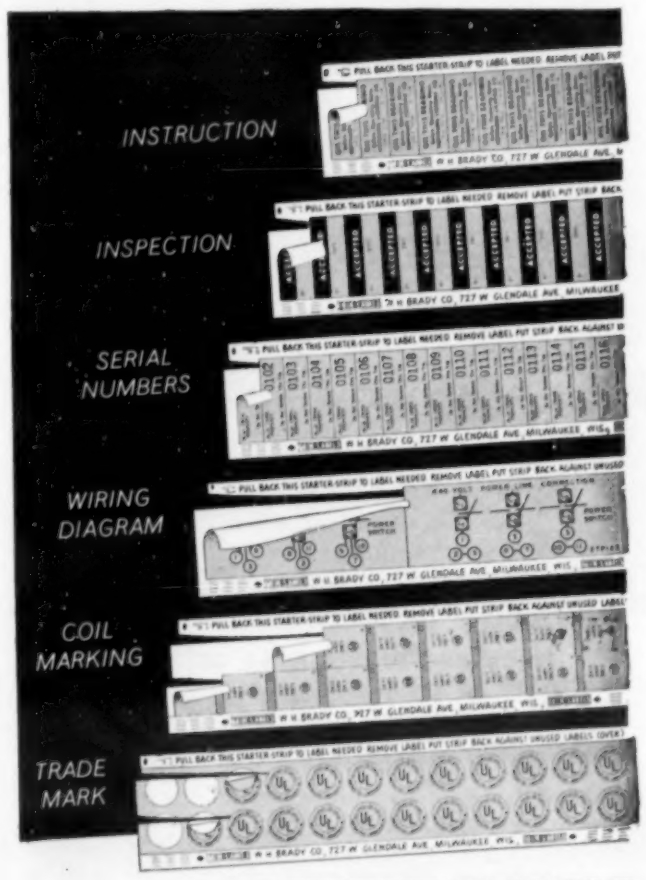
On-the-job photos in Bulletin 48-JS demonstrate the many advantages of the Nutting Jack and Skid System. It is easy and inexpensive to install—and is so flexible to varying plant layouts that there is scarcely a materials handling problem to which it cannot be profitably applied.

Representatives in principal cities—Look under "Trucks" or "Casters" in classified phone directory—

Or SEND NOW FOR BULLETIN 48-JS

SINCE 1891 **Nutting TRUCK AND CASTER CO.**
2015 DIVISION ST., FARIBAULT, MINN.
Export Sales: School International, Inc., 4237 North Lincoln Ave., Chicago 18, Ill.

If you write maker identify as IEN - 2532



Self-sticking **BRADY-LABELS** *in whatever shapes, colors, sizes, quantities YOU need!*

Special BRADY QUIK-LABELS fill the bill, no matter what your labeling requirements. Your choice of cotton cloth or acetate cloth, glass fibre, paper, cellophane, plastic or acetate fibre label materials printed in any wording, any colors, to your specifications. Pre-cut to exact size, they come mounted on handy Dispenser Cards ready for use. Brady Self-Sticking Labels are instantly released from Cards by exclusive *zipper-action* Starter Strip. We've successfully solved tough identification problems for hundreds of manufacturers. What's yours? Chances are we have the answer. Write today for FREE SAMPLES and useful literature.

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · AISLE MARKERS · MASKS & STENCILS · PRINTED ROLL TAPES

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
765 W. GLENDALE AVE. • MILWAUKEE 12, WIS.

If you write maker identify as IEN - 2534

ONE OF AMERICA'S BROADEST LINES OF HORIZONTAL ALL-PURPOSE PUMPS

PEERLESS PUMPS

OTHER PEERLESS TYPES:

Fractional hp close-coupled

Integral hp flexible-coupled or V-belt drive

Close-coupled & flexible-coupled pumps ¼ to 150 hp—up to 5500 gpm

Write today for Peerless Bulletin No. B-2300. Illustrated with views of all pumps in the Peerless Fluidyne line. Includes sectional drawings, elevations, dimensional data and head-capacity characteristics. You can buy and apply right from this bulletin.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta; Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles; Phoenix; Albuquerque, N. M.; Tulsa

If you write maker identify as IEN - 2535

Speed-Up SCREW-DRIVING and NUT-RUNNING

with these proven Milwaukee TOOLS

Model 624

Screw-Driver and Nut-Runner. Positive Type Clutch. AC or DC, 500 RPM. Handles Nos. 10 to 16 wood screws. Complete with assorted Bits, Finders, and Socket Driver.

$69.50

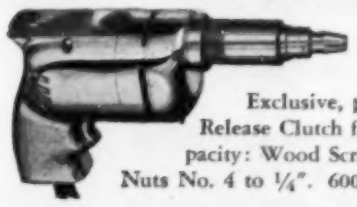
Model SDA-1
Screw-Driver Attachment
(In Circle Above)

$29.50

Adaptable to MILWAUKEE ½" Electric Drills, Models S-412 and S-512 only.

As a Nut-Runner, Model 624 handles Bolts and Nuts from No. 10 to ⅜"

Model 615 SCREW-SHOOTER and NUT-RUNNER



$69.50

Exclusive, patented, adjustable Torque Release Clutch for any desired tension. Capacity: Wood Screws No. 4 to 12; Bolts and Nuts No. 4 to ¼". 600 or 1000 RPM; AC or DC.

Write Us For Complete Data TODAY

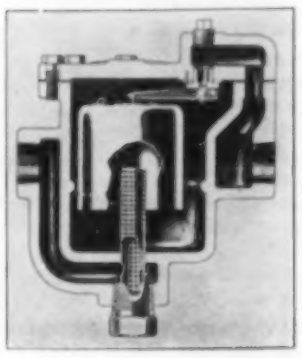
MILWAUKEE Screw-Shooters and Nut-Runners are used extensively in automotive, aircraft, refrigeration, radio, television and many other industries. Complete specifications for all Models, including Model SDA-1 Hevi-Duty Screw-Driver attachment for Electric Drills will be sent you promptly.

MILWAUKEE ELECTRIC TOOL CORP.
5360 WEST STATE STREET • MILWAUKEE 8, WISCONSIN

If you write maker identify as IEN - 2537

TRAP . . Inverted bucket design employs cam action to open large port

Source: SARCO COMPANY
350 Fifth Ave., Dept. IEN, New York 1, N. Y.



Bulletin 360-A

Steam and condensate enter this new Type B trap through a connection in the left hand side of the housing. The two move downward through a cast passage to issue inside the inverted bucket after passing through a perforated cylindrical screen. The condensate fills the interior of the housing. The steam displaces condensate inside the bucket so the latter rises to press against the port lever to hold the trap closed until the steam, escaping through a bleed opening in the top of the bucket, permits it to fill with condensate and move downward.

This movement is supplemented by the action of a cam located close to the ball closed port to pull the ball away from the port. The action, in connection with a slot in the pin pivoted lever, opens the port wide for high capacity discharge until steam, following the condensate, enters the trap and again "floats" the bucket.

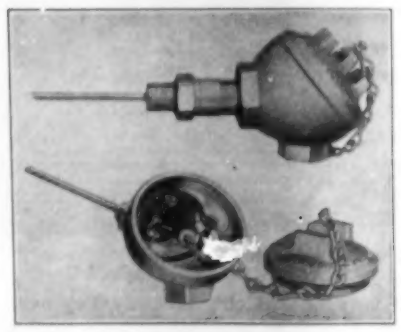
Five sizes are available in standard construction with a brass bucket and strainer. They can be specified with stainless steel in either one or both of these trap parts. The smallest unit takes ½ or ¾-in. pipe connection. The largest takes 1½ or 2 inches. Each size is available to specification with a bi-metal air vent to supplement the regular trap action.

Interchangeable orifices are supplied for a pressure differential, in six steps, between 1 and 250 pounds. The largest orifice, 1 1/16 in., will pass 20,000 lb. of condensate per hour on 15-lb. differential pressure. The largest, ⅜-in. orifice, will pass 19,400 lb. on 250-lb. differential.

If you write maker identify as IEN - 2538

SIGNALING . . Heat detector to indicate over-heated sleeve bearing

Source: THOMAS A. EDISON INCORPORATED
51 Lakeside Ave., Dept. IEN, West Orange, N. J.



Quickly accessible

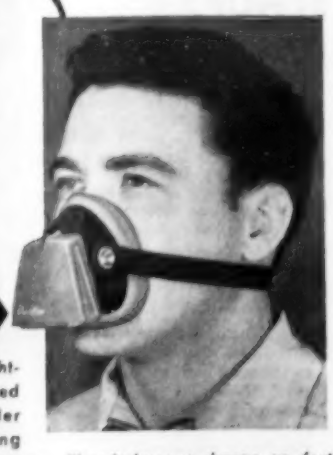
The element in this new Model-166KC resistance temperature detector is assembled in the tip of its enclosing tube to permit installation in sleeve bearings, as on motors, or against flush surfaces. The element is available in lengths to 4 ft. with a maximum diameter of 0.218 inches. It fits into a holder assembly and head that are protected for outdoor installations and against rough use. The element can be withdrawn by removing the holder cap. It serves to actuate temperature recording, indicating and monitoring equipment in a range between minus 70 and plus 300 deg. Centigrade.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2539

STOPS DUSTS *Electrostatically*

McDonald **dustfoe #55 RESPIRATOR**



Really tops in dust protection. Lightweight (less than 3 oz.)—engineered for perfect balance. Filter-holder width reduced 50%, eliminating "blind spots." "Static-Web" throw-away filter induces a charge on dust particles—increasing normal filtering action. Aluminum face-piece, rubber cushioned, may be formed to fit any face. Every part replaceable.

WRITE FOR BULLETIN AND PRICES

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 2540

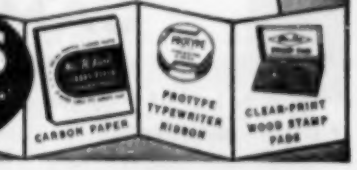
INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.



If you write maker identify as IEN - 2541

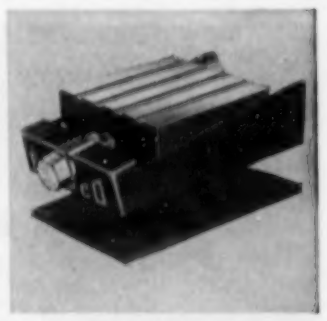
PERIODIC LEVELING IMPORTANT TO PEAK MACHINE EFFICIENCY!

Machine tool manufacturers emphasize the importance of not only setting machines level, but keeping them that way. It's a must where accurate work tolerances are involved, or, if you're trying to keep down machine maintenance costs.

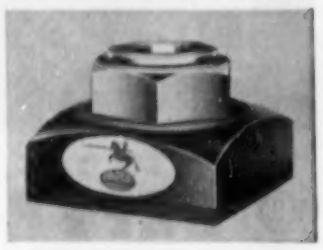
With EMPCO JACKS, setting machines level and keeping them that way is as simple as turning a screw . . . for that's all you do! Apply a wrench to the "hex" screw head and turn right or left until your level indicator reads "zero."

To reduce vibration, VI-SORB mounting pads are optional with each style EMPCO JACK. Mounting pads not only lessen the vibrations generated within the machine itself but also isolate it from the effects of vibrations in the building.

Each style EMPCO Leveling Jack is made in three sizes for light to heavy equipment and each size is available in many models suitable for various installations.



Style JD Wedge type



Style JS Screw type

For complete specifications and prices, write the Enterprise Machine Parts Corporation, 2737 Jerome Ave., Detroit 12, Michigan.

If you write maker identify as IEN - 2542

NoDrip ...STOPS CONDENSATION DRIP!

NoDRIP PREVENTS RUST
in addition to stopping drip and keeping floors dry.

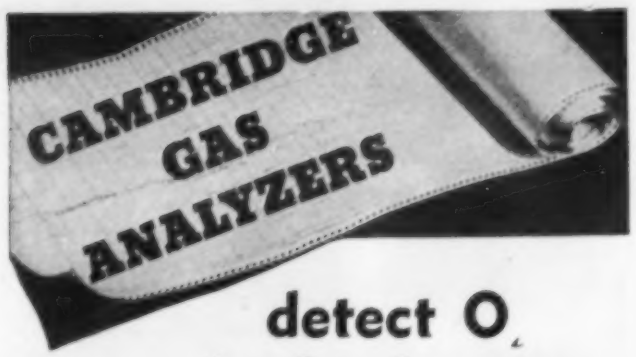
ANYONE CAN APPLY
Brush, trowel or spray NoDrip on tanks, condensers, suction lines, vats, pipes, walls, ceilings, etc. NoDrip adheres to metal, concrete, brick, plaster. It forms a seamless covering that is effective as soon as dry. Acid, alkali and brine resistant.

Interesting 32-page Handbook shows what NoDrip is and what it does. It's free. Send coupon today.

☐ SEND NoDRIP HANDBOOK
NAME_____
ADDRESS_____
CITY_____ STATE_____

J. W. MORTELL CO., 510 BURCH ST., KANKAKEE, ILLINOIS
TECHNICAL COATINGS SINCE 1895

If you write maker identify as IEN - 2543



detect O_2 in feed water

Continuous records of the oxygen dissolved in boiler feed water and of the hydrogen entrained in steam, indicate when corrective measures are necessary to prevent otherwise unsuspected and costly corrosion. Cambridge Analyzers measure and record dissolved oxygen directly. The hydrogen in the steam is measured and indicates the quantity of oxygen set free by dissociation. Cambridge Instruments are available for continuously recording either O_2 or H_2 separately, or O_2 and H_2 simultaneously.

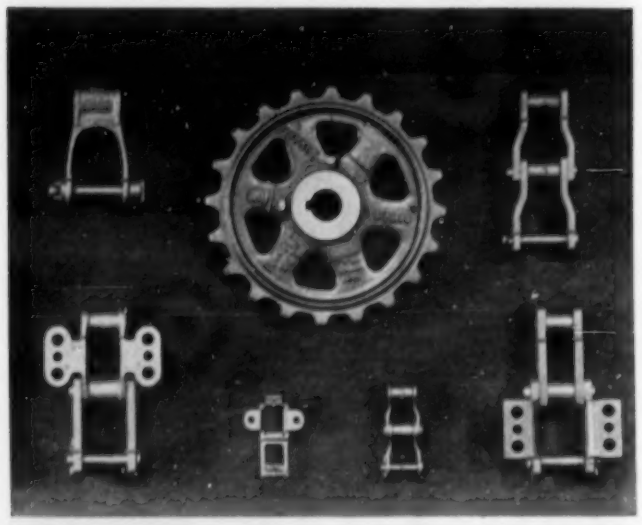
Send for Bulletin 148 B. P.

CAMBRIDGE INSTRUMENT CO., INC.
3710 Grand Central Terminal • New York 17, N. Y.

PIONEER MANUFACTURERS OF PRECISION INSTRUMENTS

If you write maker identify as IEN - 2544

CHAINS and SPROCKETS



THE JEFFREY MANUFACTURING CO.
Columbus 16, Ohio

IF IT'S MINED, PROCESSED OR MOVED . . . IT'S A JOB FOR JEFFREY!

sales offices and distributors in principal cities

If you write maker identify as IEN - 2545

Geared to Industry's Production Demands Since 1887

Offering the most complete line of washers available today . . . all types and sizes, all materials, all finishes. More than 25,000 sets of dies. Let us quote on your requirements.

WROUGHT WASHER MANUFACTURING CO.
The World's Largest Producer of Washers
2207 S. BAY ST., MILWAUKEE 7, WIS.

If you write maker identify as IEN - 2546

SWITCH . . Miniature snap acting, single pole, single or double throw

Source: ELECTRO-SNAP SWITCH & MFG. CO.
4220 W. Lake St., Dept. IEN, Chicago 24, Ill.

About full size

Overall length of the plastic housing, that encloses the mechanism in this new Type E4 miniature switch, is a little under ⅞ inch. The operating push button is about ⅛ in. in diameter. The snap acting mechanism equalizes stress on the switch springs. The action of the switch is positive with no dead center.

Connections are made at solder terminals that extend from the bottom of the housing. Toggle, push button and leaf type actuators are available. The switch mounts by means of two No. 2 screws through the housing. Contacts can be specified single-pole single-throw either normally open or normally closed or single-pole double-throw.

Pre-travel, in the basic switch, is 0.02 in. maximum. Overtravel is 0.007 in. minimum. Movement differential is 0.003 in. maximum. Operating force is 150 gm. maximum. Release force is 40 gm. minimum. The contact gap measures 0.02 inch. Contact pressure is 60 grams. Rating is 2.5 amp. on 110/220-volt ac. based on a life rating of 150,000 operations.

If you write maker identify as IEN - 2547

CORROSION PROOFING . . Oil base liquid for finished metal surfaces

Source: R. M. HOLLINGSHEAD CORPORATION
840 Cooper St., Dept. IEN, Camden 2, N. J.

Specification
MIL-C-15074-A

Klad Kote 356 is a new oil base corrosion proofing liquid with flash point at 240 deg. F. It is designed for use on finished metal surfaces to prevent corrosion due to finger prints and work handling in process. It will protect a finished surface for 30 days. Its high flash point minimizes fire danger. No slushing operation is required when the liquid is employed.

If you write maker identify as IEN - 2548

ROCK DRILLING . . Carbide core drill particularly for concrete, ⅜ to 1 inch

Source: TILDEN TOOL MFG. CO.
7111 N. Glenwood Ave., Dept. IEN, Chicago 26, Ill.

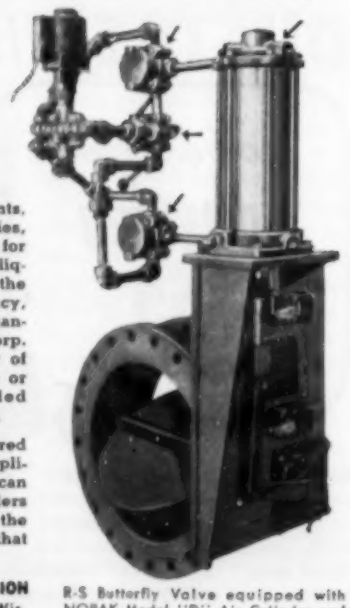
Overall size range 3/16 to 12 inches

A spiral is rolled in the shank of this recently improved carbide tipped drill back of each of the tips in construction representing improvement over the design, previously described IEN-243-49. There are six such spirals in the illustrated 1-in. drill. The cylinder, back of the tipped ends, is slotted longitudinally to assist in clearing bits of the core material since the drill is intended to produce a hole in concrete rather than to take a test core. A hole can be cut through materials embedded in the concrete such as glass, steel, rock.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2549

R-S Butterfly Valves to Regulate Flow of Liquids and Gases, ...employ NOPAK Cylinders Controlled by NOPAK Operating Valves



In industry, in sewage plants, water works and other utilities, R-S Butterfly Valves are used for fast, accurate flow-control of liquids, vapors and gases. In the interest of speed and efficiency, and to reduce or eliminate manual effort, the R-S Products Corp. of Philadelphia equips many of its valves with NOPAK Air or Hydraulic Cylinders controlled by NOPAK Operating Valves.

The R-S Butterfly Valve pictured is typical. This successful application may suggest how you can use NOPAK Valves and Cylinders in your plant, or to improve the performance of equipment that you build for others.

GALLAND-HENNING NOPAK DIVISION
2760 S. 31st St. • Milwaukee 46, Wis.

Representatives in Principal Cities

R-S Butterfly Valve equipped with NOPAK Model "D" Air Cylinder and NOPAK Valves for optional solenoid or manual control.

Refer to Sweet's File for Product Designers or write for Bulletin SW-2.

NOPAK VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE
A 7555-1/9-IA

If you write maker identify as IEN - 2550

Is this your soldering problem, too?

Higher Speed with Smaller Tips?

The answer is —

HEXACON SUPER POWERED SOLDERING IRONS

SIX MODELS TO CHOOSE FROM

Tip Dia.	Watts	Cat No.	List Price
1/4	100	P-114	$8.25
1/4	150	P-154	9.00
1/4	200	P-214	10.00
3/8	200	P-238	10.00
1/2	200	P-212	10.00
3/8	300	P-338	13.25

Solder Faster with Lower Tip Cost!
For example, Cat. P-214 has more speed than conventional 200 watt iron, but takes ¼" tip instead of ⅝" *(only 1/6th the copper).*

Write for Catalog showing 40 industrial soldering irons of every type and size; no obligation.

HEXACON ELECTRIC CO.
155 WEST CLAY AVENUE, ROSELLE PARK, NEW JERSEY

HEXACON — Industry's No. 1 Soldering Iron

If you write maker identify as IEN - 2551

ONE MILLION RELAYS

Over 1000 Types
24 HOUR DELIVERY FROM OUR STOCK!

- Standard, Respected Brands
- Brand New, Boxed
- Inspected and Guaranteed
- Priced to Your Advantage

Write for New 16 Page Catalog

Our relay stock, which is the world's largest, has been carefully built up over a period of several years. Nothing but first run, professionally selected items are carried.

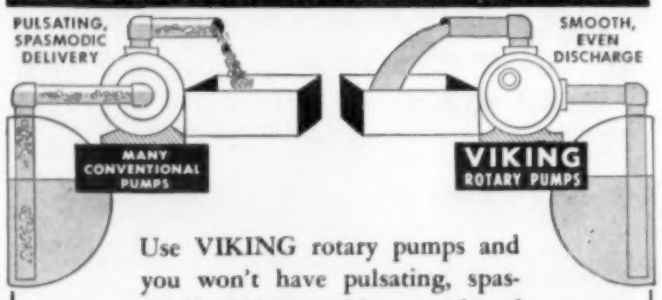
Send us your relay requirements. You will receive immediate quotations.

samples on request. *Phone, Wire or Write*

Relay Sales
SEeley 8-4146
4721 W. MADISON STREET
DEPT. No. 9 CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 2552

IF YOU WANT SMOOTH PUMPING



Use VIKING rotary pumps and you won't have pulsating, spasmodic delivery with aerated and foamy discharge.

With VIKINGS, you have fast, smooth priming and constant, even discharge of the liquids from beginning to end.

You can also handle not only thin, gaseous liquids, but heavy, viscous liquids as well. And all can be handled with excellent results.

Ask for further details today. Bulletin 54SF sent promptly on request.

VIKING AN HONORED NAME IN PUMPING

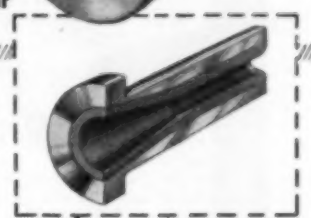
See Our Catalog in Sweet's

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

If you write maker identify as IEN - 2553

Why put up with
fast wearing blast cleaning nozzles?

This SUPER-HARD BORIUM INSERT protects the *entire* nozzle from wear



When blast cleaning nozzles are equipped with tungsten carbide "BORIUM" liners, you save many ways:

- Rapid cut-outs are eliminated.
- Wear resistant liners retain orifice size longer.
- High air velocity is maintained.
- Pattern is tightly concentrated.

. . . Result? less down time, fewer nozzle changes. MORE and faster work accomplished.

300 minimum hour guarantee when cleaning with sand or most other common abrasives. Special BORIUM inserts made to order for your nozzle design. Standard screw and flange BORIUM NOZZLES carried in stock.

STOODY COMPANY
11930 E. Slauson Ave., Whittier, Calif.

If you write maker identify as IEN - 2554

New Safety Aluminum Extension Ladder is Easy to Carry, Lasts Longer

Weighing only 1¾ lbs. per foot, this strong, lightweight Safety Aluminum Extension Ladder is easily carried, even in the longer lengths.

The corrosion resistant aluminum offers unusual durability; is immune to rust, rot or mildew. Strong, interlocking-channel side rails assure trouble-free extension. Positive self-locking safety locks (see illustration) are easily adjusted at any height. Rungs are double-bolted to rails, and have heavily serrated top edges to prevent slipping. Combination type feet have super grip rubber treads and self-sharpening spikes. Available in 16', 20', 24', 28' and 32' lengths. Bottom section is available for use as a single ladder. Write for free Bulletin L-76.

New Safety Aluminum Stepladder is Securely Braced

Designed for maximum safety and strength, this easily-handled Safety Aluminum Stepladder weighs only 2¾ lbs. per foot. Heavy-duty steps are double riveted to extra rigid, channeled side rails. Deeply grooved top and steps prevent slipping. Safety-type spreaders never pinch fingers. All four legs have heavy-duty rubber boots to protect floors and prevent slipping. Available in 4', 5', 6', 7', 8' sizes. Write for free Bulletin L-76.

PS Co. offers a complete line of safe, easy-to-handle magnesium ladders as well as famous "Gold Medal" wood ladders. Write for free Bulletin L-70 and Catalog L-71.

GOLD MEDAL LADDERS SCAFFOLDING — FOR GREATER SAFETY...EFFICIENCY...ECONOMY
THE PATENT SCAFFOLDING CO., INC.
38-21 Twelfth Street • Dept. IEN • Long Island City 1, N. Y.
Branches in All Principal Cities

If you write maker identify as IEN - 2556

CLEANING . . Abrasive blast machine with 30 by 20 by 24 in. compartment

Source: RUEMELIN MFG. CO.
3860 N. Palmer St., Dept. IEN, Milwaukee 12, Wis.

Bulletin 41

New size has been added to the company's utility abrasive blast equipment, previously described IEN-8778-50, for use in metal working plants, in automotive and aircraft maintenance, for steel treating, for cleaning metal surfaces, to etch or frost glass and pottery, to remove burs from work parts and tools, carbon deposits from engine parts and for experimental blast cleaning operations. The machine measures 35 by 34 by 66 inches. It is equipped with a filter type dust collector and exhaust blower to return clean air to the room.

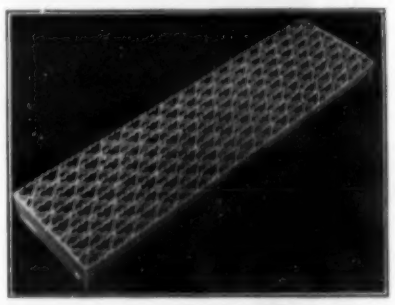
Compressed air, from a shop source, is connected to a suction ejector nozzle in the top of the cabinet. Abrasive is picked up from a hopper near the bottom to be directed downward to a work piece for cleaning or processing. The work is introduced through a door at the front. Action of the nozzle is controlled at a foot operated valve. The interior of the cabinet is illuminated so work is clearly visible through the window in the top.

The work is supported on a screened table for free movement by the operator who reaches it with gloves attached to hand openings at the front. The gun will operate at any pressure from 20 to 100 pounds. It is fitted with a ceramic nozzle, in standard construction, or can be specified with a carbide nozzle. When the jet measures ⅛ in. in diameter, the machine takes 17 to 26 cfm. of air at 60 to 100 pounds.

If you write maker identify as IEN - 2557

FLOORS . . Formed steel grating with small openings for safe walking

Source: BUSTIN FIRM-GRIP GRATING CO.
Dept. IEN, Dover, N. J.



Bulletin, "Firm Grip"

Straight bearing bars are employed between adjacent formed bars, in this new Type-B grating, to cut the diamond pattern in half. The design presents openings measuring $\frac{11}{16}$ in. between the bearing bars, too small to permit entrance of a high heel or a narrow caster. The grating is designed for use where grease, oil, or water could cause accidents from slipping. It is particularly suited for flooring, manhole covers, platforms, mats, steps.

Two bar thicknesses are ⅛ and $\frac{3}{16}$ inch. Bearing bar height ranges from ¾ to 2¼ inches. The company is prepared to supply panels in multiple unit widths from 3⅞ to 22⅝ in., based on the ⅛-in. bearing bars. Literature is available showing standard dimensions with a table of safe loads for spans from 2 to 8 feet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2558

INEXPENSIVE water heating

Heat water in small tanks by direct injection of steam with the
SARCO THERMOTON TYPE S
It combines the function of a silent steam nozzle with approximate temperature control. Prevents boiling over; shuts off automatically when no water is drawn; conserves steam.

Sizes ½" to 2", pressures to 200 psi

Ask for Bulletin 551

503

SARCO SAVES STEAM
SARCO COMPANY, INC.
Empire State Bldg., New York 1, N.Y.
SARCO CANADA, LTD., TORONTO 2, ONTARIO

If you write maker identify as IEN - 2559

SPEED UP SMALL PARTS ASSEMBLY

Parts feed automatically toward front—
end reaching and fumbling.

Bins taper toward front to form convenient semicircle—keep all bins within easy reach.

Stacking, locking construction for rigid set-ups, easily changed when necessary.

All-welded construction. Smooth, folded edges.

New-design, adjustable hoppers provide increased capacity and permit regulated flow of parts according to sizes and weights.

Two-sizes—tapered or straight sides.

IMMEDIATE DELIVERY
Manufactured and sold in Canada exclusively by Wickwire-Stackbin, Ltd., Ottawa
Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 2560

NO LOST LABELS...

BRADY Wire Markers stick to your finger from Card to Wire

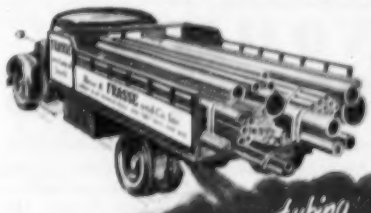
You *can't drop* a Brady Wire Marker! It *sticks to your finger* until you put it on the wire, then sticks-quick and permanently.

Brady's superior adhesive is not affected by contact with fingers. And there's no cumbersome, skin-cutting tab to get rid of.

Self-sticking Brady Wire Markers are silicone-coated to resist dirt, grease, grime. Over 1,000 different markers in stock. Specials made to order. Write for FREE SAMPLES today!

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · AISLE MARKERS · MASKS & STENCILS · PRINTED ROLL TAPES
MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
745 W. Glendale Ave., Milwaukee 12, Wisconsin

If you write maker identify as IEN - 2561



FRASSE for tubing Speedy delivery

from COMPLETE stocks —

For new applications—or for everyday requirements—you'll find it more convenient to order your tubing from Frasse. Complete stocks—over 700 sizes of seamless mechanical tubing alone—permit you to select the sizes best suited to your needs.

Join the hundreds of leading industrial firms that have made Frasse their one dependable source for *everything* in tubing. For quick delivery—for accurate reliable service—as well as suggestions on fabrication, write or call Frasse . . . *the* tubing warehouse.

SEAMLESS AND WELDED MECHANICAL TUBING
CENTRIFUGALLY SPUN TUBING
CONDENSER, HYDRAULIC AND PRESSURE TUBES
AIRCRAFT TUBING
STAINLESS TUBING—SEAMLESS AND WELDED
STAINLESS PIPE, VALVES AND FITTINGS

Peter A. FRASSE and Co., Inc.
17 GRAND STREET, NEW YORK 13, N. Y. • WAlker 5-2200
LYNDHURST • PHILADELPHIA • BUFFALO • SYRACUSE • HARTFORD

If you write maker identify as IEN - 2562

If you write maker identify as IEN - 2563

for original equipment vacuum pumps

call on GAST

Motor-Pump Model 0406—To .6 CFM, 25" vac. Wt. 16 lbs., 10¼" long.

V-belt Model 1550-V2—To 10 CFM, 15" vac. For paper feeding, etc.

Heavy-duty, fan-cooled Model 1065-V4-34. To 28" vac. with ⅓ HP.

Heavy-duty, fan-cooled V-belt Model 2565-V12A. To 21 CFM, 28" vac.

Some accessories standard.

YOU GET HIGH QUALITY that solves product problems with long-lived high performance . . . a result of dependable rotary-vane design plus rigid quality control.

A WIDE CHOICE OF SIZES from five basic types to 24 CFM or 28" vacuum. Some models oil-less construction. Our volume sales cut your costs!

YOU GET FULL COOPERATION from Gast engineers backed by over 25 years' experience building vacuum pumps for original equipment. For willing cooperation, call on Gast!

Write GAST— describing your specific application. Request Catalog and "Ideas" Booklet.

see our catalog in PRODUCT DESIGN FILE or write for copy

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS (TO THREE H.P.) (TO 30 CFM) (TO 28 INCHES)
GAST MANUFACTURING CORP., 119 Hinkley St., Benton Harbor, Mich.

If you write maker identify as IEN - 2564

ECONOMICAL! DUNKING STATIONS

The safe economical solution to your plant smoking problem! Sipco Dunking Stations prevent fires. Cigarettes, cigars, matches, etc. immediately extinguished—no smoldering — no fire hazard! Built specifically for hard industrial use — and abuse — will last a lifetime.

Unit No. 1—Heavy cast aluminum canister, attractive metal sign, upright and heavy weighted base for use on floors, aisles, etc.

Unit No. 2—Same as Unit No. 1 except without upright and base. Easily mounted on walls, columns and posts.

Unit No. 3—Cannister alone with mounting bracket.

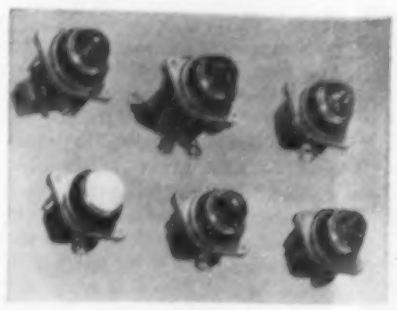
Write now for Illustrated folder which gives complete details.

STANDARD INDUSTRIAL PRODUCTS CO.
Dept. N. 116 South Garfield Ave., Peoria, Ill.

If you write maker identify as IEN - 2565

SIGNALING . . Indicator lights, red, green, white, blue, amber, clear

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



For panel mounting

Three forms, designated Resistor, Transformer and Full Voltage, are available in this new line of heavy duty oil tight indicator lights. They are rated from 110 to 600 volts for 10-amp. continuous duty. The lenses are faceted and made of glass. They are sealed to metal caps and designed for visibility from all angles. They are available for both front and back mounting.

If you write maker identify as IEN - 2566

PLASTIC . . Liquid casting resin to make reinforced plastic tooling

Source: HOUGHTON LABORATORIES INC.
322 Bush St., Dept. IEN, Olean, N. Y.

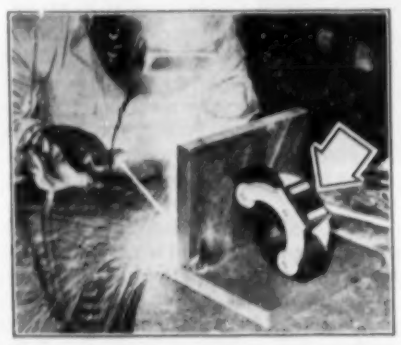
Kit lists at $18

The company announces availability of a new kit containing the required materials and instructions for evaluation of reinforced tools. The kit contains the company's Hysol liquid resin that is used in combination with fiber glass fabrics to produce spotting racks, checking fixtures, assembly jigs. Multiple duplications can be made from original models. Time and cost savings are considerable in certain tooling applications. Modifications in tool design and repairs can be made without difficulty. In addition to the kit, the company is prepared to produce tools to a user's specifications.

If you write maker identify as IEN - 2567

CLAMP . . Permanent magnet unit holds work in adjustable positions

Source: STANDARD PORTABLE CORD CO.
1300 E. 2nd St., Dept. IEN, Jamestown, N. Y.

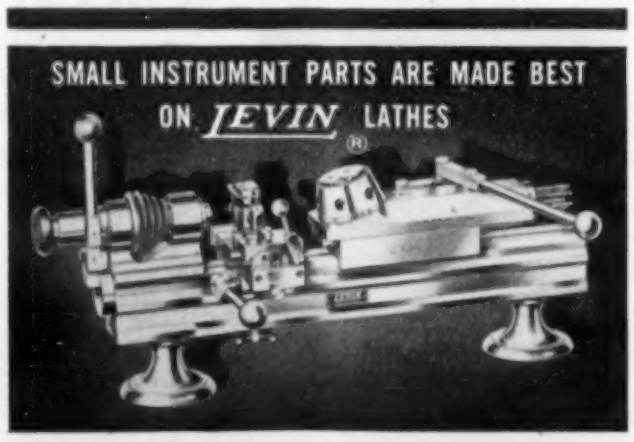


Magnets rate 45 pounds

Magic Positioner is a new permanent magnet holding device made up of three neoprene covered Alnico magnets in a die cast aluminum frame. Each of the magnets is pivoted in the frame for rotation to a desired position where it can be locked. The clamp is shown in the illustration with two of the magnets in active holding position to locate two steel plates for welding at 90 deg. with each other.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2568



Twenty-three models for all types of work. 4" swing, Bed Length 12" or 18"; over 100 stock sizes of collets from .004" to 5/16".

Send for Catalog L describing Lathes for tool work, second operations; turrets and full line of accessories.

LOUIS LEVIN & SON, INC., 782 E. PICO BLVD., LOS ANGELES 21, CALIF.

If you write maker identify as IEN - 2569

HOW TO SAVE MATERIAL AND LABOR IN PIPING LAYOUTS

Here is a special fabricating service designed to save time, material and labor in piping systems. By eliminating numerous flanged joints and combining several fittings into one integral unit, as illustrated, Naylor fabrications provide the answer for greater efficiency and economy.

All types of materials can be fabricated accurately to your specifications. Sizes range from 3" to 44" in diameter and wall thicknesses up to ¾".

Naylor Bulletin No. 525 presents helpful information on this special service. Write for your copy today and submit your problem for recommendation and quotation.

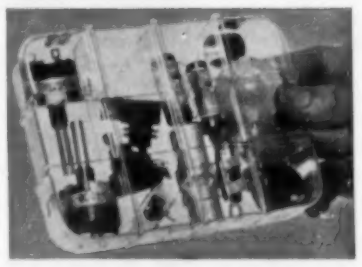
NAYLOR PIPE

Naylor Pipe Company • 1235 East 92nd St., Chicago 19, Illinois
Eastern U.S. and Foreign Sales Office 350 Madison Ave., New York 17, N.Y.

If you write maker identify as IEN - 2570

THE RIGHT BOX CAN DO A JOB FOR YOU

SAVE MONEY—cut inventory time and handling effort—through visual aid of box.
Use Lite-TUFF PLASTIC BOXES



Lite-TUFF Standard Boxes and Containers of Non-Flam* light weight plastic, made of approved material, are no fire hazard. They are available in a wide variety of compartment arrangements. LOW DIE COST ON CUSTOM MADE.

- Very tough—will not crack or shatter in normal use.
- Stainless steel hinges.
- Resistant to most chemicals—samples supplied for tests.
- May be beautifully heat embossed.
- All transparent or color combinations.
- Make your own compartment layout on our Plot Plan Sheets.
- State your problem—let us solve it.

Full information and Plot Plan Sheets sent upon request . . . Dept. A2
*Reg. U. S. Pat. Off.

SHOE FORM CO. INC., Auburn, New York

If you write maker identify as IEN - 2571

The Simplest Way to

SOLVE SCALE PROBLEMS

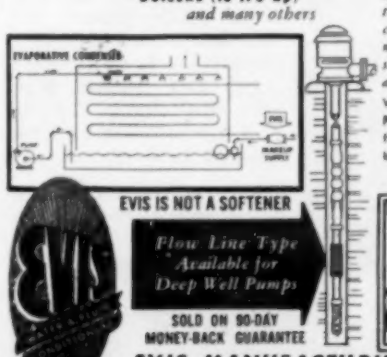
PATS. APPLIED FOR

Proven Uses Include
ALL PIPING SYSTEMS
CONDENSERS (most types)
COOLING TOWERS
ENGINES & COMPRESSORS
CUBE & FLAKE ICE MAKERS
BOILERS (to 175 wp)
and many others

EVIS Water Conditioners are helping industry conquer its costly scale problems. Plant equipment is made to operate at higher efficiency. Maintenance costs are profitably lowered and shut-downs for periodic cleanups are often entirely eliminated. The EVIS units are Specially Processed to impart a continuous catalytic action on water-solids flowing through it. This action alters physical behavior sufficiently to inhibit most scale formations. Many thousands of EVIS Water Conditioners are now in service.

Write for further information or ask your Plumbing Supply, Air-Conditioning-Refrigeration or Industrial Equipment Jobber.

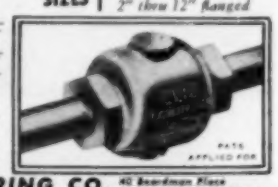
SIZES | ⅝" thru 2" screwed; 2" thru 12" flanged



EVIS IS NOT A SOFTENER

Flow Line Type Available for Deep Well Pumps

SOLD ON 90-DAY MONEY-BACK GUARANTEE

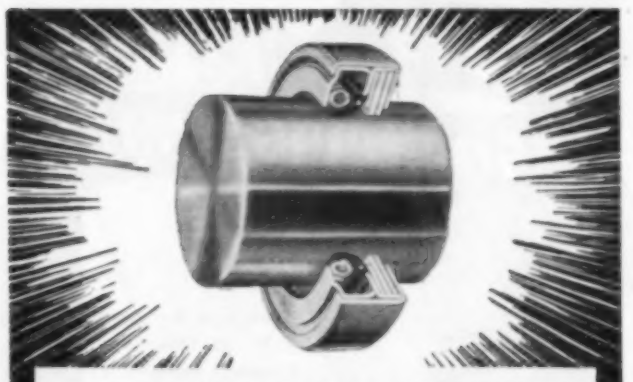


PATS. APPLIED FOR

EVIS MANUFACTURING CO. 40 Boardman Place, San Francisco 3, California

FRANCHISED REGIONAL DISTRIBUTORS
WHITTIER (Calif.) — WM. EVIS COMPANY
SAN BERNARDINO (Calif.) — KNUPPS & WRIGHT
SAN FRANCISCO — NORTH EVIS SCIENCE
RENO — WATER CONDITIONED SALES CORP.
SEATTLE — EVIS NORTHWEST
CHICAGO — EVIS GREAT LAKES COMPANY
OMAHA — EVIS MIDWEST, INC.
DALLAS — EVIS SOUTHWEST CO.
ATLANTA — EVIS SOUTHEAST CO.
PHILADELPHIA — EVIS MIDEAST CO.
ALBANY (New York) — EVIS NORTHEAST CO.
EXCLUSIVE MARINE DIST. — MORAN-EVIS CO., SAN FRANCISCO

If you write maker identify as IEN - 2572



AMERICAN FELT REALLY SEALS!

Above is an OilFoil seal, consisting of two layers of felt, bonded with two septums of Hycar, the synthetic rubber-like substance that is impervious to and unaffected by oils, greases, and the hydrocarbons used in hydraulic systems. Such washers can have one, two, or three septums, to keep lubricants in and seal out water, dirt, gases and retain pressures. If there is no lubricant in the enclosure, the felt can be impregnated with oil or grease, to provide lifetime bearing lubrication. OilFoil seals are supplied cut to exact dimensions, ready for assembly, and usually require no attention between major overhauls. For more information, write for Data Sheet No. 11, "Felt Seals, Their Design and Application." Free. Oil Foil T. M. Reg.

American Felt Company
TRADE MARK
18 GLENVILLE ROAD, GLENVILLE, CONN.

If you write maker identify as IEN - 2573

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO *Distributors in principal cities*

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 2575

GAGE . . Vernier height instrument with slotted base and long vernier

Source: GEORGE SCHERR COMPANY
200 Lafayette St., Dept. IEN, New York 12, N. Y.

For precision work

A short scriber, free from overhang, can be employed to mark work pieces, starting at the bottom of the base, due to the slot at the front of the scale in the base of this new height gage. The 2½-in. vernier scale permits readings to 0.001 in. without need for a magnifier. Base, sliding jaw and scriber are hardened. The measuring surfaces are lapped and polished. A micrometer screw is provided for fine adjustment. The open slide permits a view of the entire scale. The gage is packaged in a hard wood case. It is available in 10, 20 and 40-in. height capacities with scales measuring 12, 22 and 42 inches. List prices are $67.50 to $285.

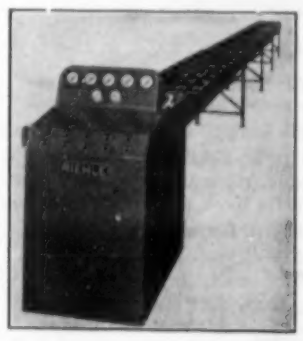
The gage can be employed to check height, distance and parallelism in connection with the company's Puppitast test indicator. This unit mounts in a special holder placed on the measuring jaw after removing the scriber. The holder lists at $3.75. The indicator lists at $24.25 with 0.0005-in. graduations and at $31.75 with 0.0001-in. graduations. Range is to 0.030 and to 0.010 in. on dials reading 0-15-0 and 0-55-0.

The indicator is sensitive and accurate and is designed for reversible use by means of a lever on the side. The contact point moves in a 180-deg. arc. The indicator swivels universally around a pivot in the shank. The dial can be turned to set the instrument at zero. Dial diameters are 1⅛ and 1⅝ inches.

If you write maker identify as IEN - 2576

TESTING . . Tension machine to proof test wire rope assemblies

Source: AMERICAN MACHINE & METALS CO.
554 12th Ave., Dept. IEN, East Moline, Ill.



Bulletin RE-9-53

Pre-stretching and proof testing operations are carried out by this new multiple tension testing machine on its five individual testing stations. Each has a different range, the lowest from 100 to 700 lb. and the highest from 1,000 to 6,500 pounds. Each station can be preset to exert any load within its range for a period from 3 seconds to 20 minutes.

The operator sets the controls for the duration and amount of pull desired then presses a "pull button" for each station to initiate the test cycle. When the preset load has been applied for the specified time, the machine releases the pull and the timer resets to zero for the next cycle.

The mooring table supports a column assembly for each of the five tensioning units. Pairs of holes in the columns provide stations to locate the fixed-end wire rope adaptors at uniform intervals to take various wire rope lengths. Threaded ends on the hydraulic piston rods permit changing the adaptors at the pulling ends. The machine is driven by a 220-volt three-phase 60-cycle ac. motor. It can be specified for 440 volts.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2577

SPEEDY AIR VISE

SPEEDS UP
✓ MILLING ✓ PUNCHING
✓ DRILLING ✓ BENDING
✓ TAPPING ✓ RIVETING

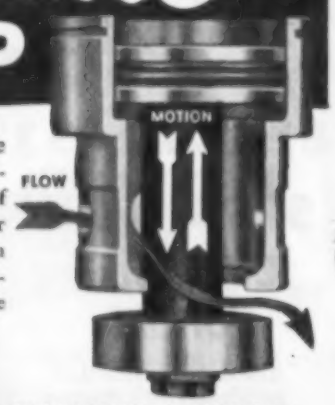
GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.
Complete with Foot Control, Air Hose and Fittings.....only **$36.00**

Prompt Delivery from Your Supplier or Write Direct
W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.
AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN - 2578

NO SPRINGS NEEDED



This removable cartridge contains the "piston poppet,"...only moving part of a Hannifin "P-M" Master Valve. This piston-driven poppet is pressure operated both ways. There are *no springs to fail!*

WRITE FOR OUR COMPLETE NEW "P-M" VALVE CATALOG

Find out how P-M Master Valves (pressure-operated) and Pilot-Master Valves (solenoid-controlled, pressure-operated) can all be serviced with a stock of just two sizes of these removable cartridges. 2-Way, 3-Way, 4-Way. Sizes: ⅜" to 1¼". Also, two complete series of ¼" direct-operated valves. Bulletin 232.

HANNIFIN

Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.
AIR AND HYDRAULIC CYLINDERS • PRESSES • AIR CONTROL VALVES

If you write maker identify as IEN - 2579

HERE'S HEAT AS YOU NEED IT

IDEAL

for Soldering that's STRONGER FASTER CHEAPER

Thermo-Grip®

Get production-line speed on solder joints that are perfect every time. No preheating, no cold-flow joints, no remakes... Thermo-Grip's resistance heating puts instant heat right where you need it for best solder adhesion. Can't damage nearby joints or parts. Many capacities and "Plier," "Pencil," "Fork" attachments to cut costs on all types of jobs.

SOLD THROUGH LEADING DISTRIBUTORS

TRY THERMO-GRIP FREE

IDEAL INDUSTRIES, Inc.
1108 Park Ave., Sycamore, Ill.
Please arrange FREE Thermo-Grip demonstration and send catalog data.
Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 2580

SAVE on Cut-off Costs!

SHOWN—Model M equipped with bar feed

. . . with this FULLY Automatic Equipment!

- Our Models M, D and J feature simplified hydraulic controls for both full and semi-automatic operation. Minimum maintenance, maximum blade life assured!
- Top results are yours on all jobs whether high speed or regular blades are used.
- Capacities range from 9" x 18" to 24" x 24".
- Also available: Model H hinge-type, economy model (9" x 16" capacity) and a complete range of accessories.
- Send today for literature on this line-up of superior metal cutting band saws.

W. F. WELLS & SONS
Three Rivers, Michigan

If you write maker identify as **IEN - 2581**

BECKER "53"
CO₂ POWERED INDUSTRIAL
SPRAY GUN
Completely Portable

The new, versatile Becker Model "53" Sprayer operates without hoses, cords, or compressors. Sprays protective coatings, paints, solvents, cleaners, oils, etc. Powerful low-cost CO_2 cartridge sprays up to one 21-ounce containerful. With special attachment, tank can be charged from air hose (for liquids atomizing at 120 psi). Nozzle removes without pressure loss, adjusts from spray to stream. Acme-threaded neck closure, rugged brass and stainless inserts, cast aluminum head. See your Distributor or order direct postpaid.

SULLIVAN-BECKER CO., Dept. 194-C, KENOSHA, WISC.

If you write maker identify as **IEN - 2582**

"We've reduced our scrubbing time from 70 to 7 man-hours ... and our floors have never before been so clean!"

— Says foreman of BURNY BROS. BAKERY, CHICAGO

Burny Bros. garage and stockroom floors get daily scrubbing with a *Job-Fitted Combination Scrubber-Vac* and *Setol Cleanser*. *They're an unbeatable team* to speed the cleaning of oily, greasy floors. *Here's why:* A *Scrubber-Vac* applies the cleanser, scrubs, and picks up—*all in one operation! Job-fitted* to specific needs, the machine provides maximum brush coverage. Its teammate, *Setol Cleanser*, emulsifies grimy oil and grease *instantaneously* for fast, thorough removal by the machine's powerful vac. The *Scrubber-Vac* shown above, *Finnell's 213P*, cleans up to 8,750 sq. ft. per hour! For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2603 East St., Elkhart, Ind.

FINNELL SYSTEM, INC. *Originators of Power Scrubbing and Polishing Machines* — FINNELL — BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as **IEN - 2583**

REDUCE COSTS ON "SMALL-WORK" GRINDING & FINISHING JOBS with

Foredom FLEXIBLE SHAFT MACHINES

- **FEATHER-WEIGHT** finger-tip-controlled handpiece (pencil size or larger) which eliminates operator fatigue.
- **CHOICE OF 5 HANDPIECE TYPES** (all instantly interchangeable). You fit the handpiece to the job at hand.
- **EXTRA GOOD FLEXING QUALITIES** in the flexible shaft assembly for effortless maneuverability.
- **LONGER MOTOR LIFE** because motor is not dwarfed to fit the hand.
- **HIGH SPEED** (14,000 RPM) which does not drop precipitately under load.
- **SILENCER EQUIPPED** flexible shaft for vibration-free performance.

BENCH OR HANG UP MODELS FOR HEAVY OR LIGHT DUTY

Also flexible shaft tools attachable to your own drill press or motor

Use Foredoms to GRIND, POLISH, DRILL, ROUT, CARVE, MILL, SAW, SLOT, CLEAN, SAND, ETCH, ENGRAVE, etc., etc.

Write for Catalog 4168

FOREDOM Electric Co., Dept. 4168, 27 Park Place N. Y. 7

NEWS NOTES **INFORMATION**

If you write maker identify as **IEN - 2584**

BIMETAL . . Suggestions on how to use it presented in booklet along with sample calculations

W. M. Chace Company
1600 Beard Ave., Dept. IEN, Detroit 9, Mich.

Twenty-two product uses in 1954 36-page edition of "Successful Applications" are combined with engineering data on properties, sizes, tolerances, sample calculations. Each application shows where and why bimetal is used in products from electric blankets to motor controls.

If you write maker identify as **IEN - 2585**

BRONZE . . Instructions on machining of Ampco Metal in revised 12-page Bulletin 66-A

Ampco Metal Inc.
1745 S. 38th St., Dept. IEN, Milwaukee 46, Wis.

Machining practice on various grades of the company's bronze is described by pictures and text in "Machining of Ampco Metal." Specific recommendations are made on turning, boring, grinding, polishing, milling, broaching, sawing, drilling, tapping with suggestions on tool design.

If you write maker identify as **IEN - 2586**

CALCULATING . . Slide rule has A, B, C, D and C-1 scales, available free

Helipot Corporation
916 Meriden Ave., Dept. IEN, South Pasadena 12, Calif.

Yours for the asking is new 6-in. plastic slide rule with five sets of standard scales and a cursor that will not fall off. The slide itself has additional graduations in inches and centimeters along its edges, carries on its back a temperature-conversion scale and a set of Ohm's-Law formulae.

If you write maker identify as **IEN - 2587**

CASTINGS . . Cardboard slide selector gives reference data on carbon and stainless steels

Lebanon Steel Foundry
87 Lehman St., Dept. IEN, Lebanon, Pa.

Nineteen carbon and low-alloy steels can be selected by moving the slide of new 4 by 9¼-in. Circle-L Slide Chart. Windows on the face read analyses, ASTM and other designations, mechanical properties, heat treatment. The other side presents similar information on 17 stainless and corrosion-resistant steels for castings. A special section covers eight heat-resistant cast-steel alloys.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2588**

If you write maker identify as **IEN - 2589**

New.. USECO ENGINEERING MANUAL

Send now for your copy of this new 36-page manual. It covers our complete line of Standardized Electronic Hardware.

It gives detailed prints and specifications covering types, sizes, materials, finishes and complete engineering data on our terminal lugs, terminal boards, insulated lugs, chassis bushings, stand-offs, spacers and other electronic items in both standard and miniature sizes. Mass production with quality control. *Competitive prices. Prompt deliveries.* Today's mail answered today! Terminal boards fabricated to manufacturer's specifications. Write for Engineering Manual.

U. S. ENGINEERING CO.
521 COMMERCIAL ST. • GLENDALE 3, CALIFORNIA

If you write maker identify as **IEN - 2590**

NOW AUTOMATIC Hole DEBURRING

with NOBURMATIC TOOL

New Noburmatics deburr and chamfer front and inaccessible back hole faces in ferrous and non-ferrous sheets, plates, extrusions, castings and forgings ***in one automatic operation***. Used in drill motors or stationary machine tools, Noburmatics produce uniform deburring with high accuracy, increase production line speed. Made in all drill sizes from ⅛" (.125) to F(.256).

Entry Noburmatic enters hole, advances to limit stop, DEBURRS FRONT FACE. (Rear cutter now projects.)

Withdrawal BACK FACE DEBURRED. Cutter automatically retracts. Tool ready for next cycle.

For Free Bulletin and Full Details, Write Today!

NOBUR MANUFACTURING COMPANY
717 N. VICTORY BLVD., BURBANK, CALIF.

If you write maker identify as **IEN - 2591**

Ball Bearing Bushings for Limited Space

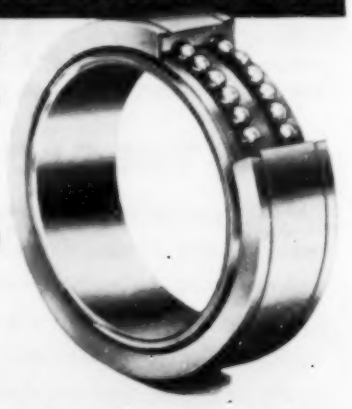
for
SHEAVES . . . FULCRUMS . . . IDLERS
CAMS . . . OSCILLATING MOTIONS
MODERATE SHAFT SPEEDS OF ALL KINDS

¼" SECTION HEIGHT

SIZES: 7/16" to 2½" bore

CAPACITIES: (Radial) 795 to 3860 lbs.

TYPES: "A" for rotating shafts; "B" for outer race rotation.



Send for detailed information

SPLIT BALLBEARING CORP.
LEBANON NEW HAMPSHIRE

If you write maker identify as **IEN - 2592**

32 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this 32 page Multiclone booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency . . . how to simplify your installations . . . how to conserve valuable plant space . . . how to get high recovery over a wide range of particle sizes, etc. *A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate*

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DESIGNERS AND MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS
Main Offices: 1651 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
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PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as **IEN - 2593**

IT'S EASY TO MAKE

Repairs

LIKE THESE...

Just mix and fix—it's easy with Smooth-On No. 1 Iron Cement. You can seal cracks in pipes, boilers, metal containers . . . tighten loose screws and fixtures in wood, metal or tile . . . anchor bolts in concrete. Smooth-On expands as it sets and hardens like iron. Makes a tight, lasting repair that virtually becomes a part of what it fixes. Keep a can on hand (Smooth-On doesn't deteriorate) and use it as you need it—at a cost of only a few pennies per repair.

FREE
REPAIR HANDBOOK

New, completely revised, 48-page illustrated handbook has hundreds of time and money saving repair tips for jobs in the plant and around the home. Millions of these repair handbooks have been distributed during our 58-year history. Write for your copy today.

SO-401

SMOOTH-ON MANUFACTURING CO., DEPT. 1
570 COMMUNIPAW AVE., JERSEY CITY 4, N. J., U. S. A.

SMOOTH-ON
THE IRON CEMENT OF MANY USES

USEFUL INFORMATION
(Continued)

If you write maker identify as **IEN - 2595**

CHEMICALS . . Storage of hydrogen peroxide is described in new technical article reprint bulletin

Buffalo Electro-Chemical Co.
Sawyer Ave., Dept. IEN, Buffalo 7, N. Y.

Recommended procedures are summarized in new 8-page Reprint Bulletin 54 for storing hydrogen peroxide, particularly from the standpoint of ability to dissipate heat due to decomposition of the solution. Included are heat-balance charts and curves of self-heating rates for solutions.

If you write maker identify as **IEN - 2596**

CONDUIT . . New NEMA booklet on rigid steel conduit, E. M. T., and their uses

National Electrical Mfrs. Association
155 E. 44th St., Dept. IEN, New York 17, N. Y.

History, properties and applications are described in new 24-page booklet, "Rigid Steel Conduit and Electrical Metallic Tubing". Industrial, commercial, residential and farm uses are included. Please use your company letterhead.

If you write maker identify as **IEN - 2597**

CUTTING . . Cardboard slide selector for feeds and speeds in machining with carbide tools

Wendt-Sonis Co.
Collier & Tenth Sts., Dept. IEN, Hannibal, Mo.

No charge for company's new Feed and Speed Calculator. It gives feed against surface speed for carbide-tipped cutting tools, knowing tensile strength of the material and hp. for the operation. It also reads hardness conversions, lists recommended cutting feeds and speeds for various materials.

If you write maker identify as **IEN - 2598**

CUTTING . . House publication issue carries an article on how twist drills cut metal

National Twist Drill & Tool Co.
Dept. IEN, Rochester, Mich.

"Metal Cuttings" in its January 1954 issue summarizes results of a study still in progress on how twist drills work. Photo-micrographs show typical drill chip sections. A diagram shows how effective rake angle differs from the actual tool rake angle. Your name will be added to the mailing list.

If you write maker identify as **IEN - 2599**

CYLINDERS . . Prize contest for new or unusual applications of power cylinders

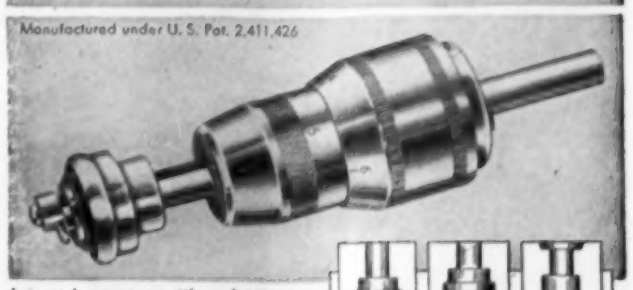
Carter Controls Inc.
2800 Bernice Road, Dept. IEN, Lansing, Ill.

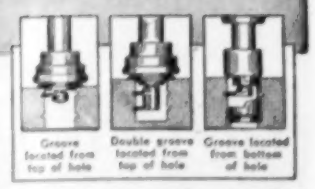
Carter Achievement Awards have been set up for new, unique or unusual applications of pneumatic or hydraulic cylinders. Entries can be made up to the end of the year. Ask for an entry blank.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2600**

Waldes Truarc Internal Grooving Tool
for precision cutting of internal grooves in bores and housings
FAST! ECONOMICAL! NEEDS NO SKILLED LABOR!





Internal groove-cutting becomes the simplest of operations with Waldes Truarc Internal Grooving Tool. Easy to adjust—easy to operate . . . readily adaptable to individual requirements.

Designed for use in any hand drill or automatic drill press and screw machine . . . assures a concentric recess without injury to metal. Operates by fingertip pressure—especially suitable for unskilled operators.

The Waldes Truarc Grooving Tool when used in an electric or pneumatic hand drill, can be taken to the job eliminating disassembly and excessive handling . . . resulting in all-around savings in time and costs!

Write now for descriptive brochure giving mechanical details, cutting sizes . . . extra features

WALDES TRUARC GROOVING TOOL
WALDES KOHINOOR, INC.
47-16 Austel Pl., Long Island City 1, N.Y.

Visit the Truarc Exhibit at the I. R. E. Show, Booth 746, March 22-25

If you write maker identify as **IEN - 2601**

MERCURY
A-310 TRAILER

Corrugated box body

Steel dump body

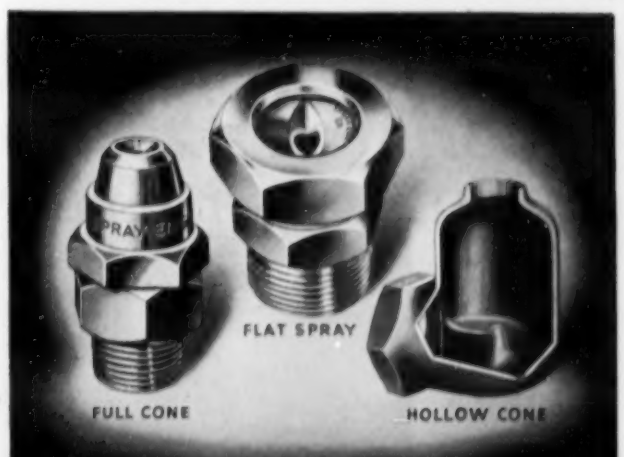
***Standardized* for economy**
***Flexible* for every need**

Basic design, materials, fabrication of the A-310 Trailer have been standardized through years of rigorous testing under severe industrial service. Sizes, deck specifications, body types and superstructure are flexible to the requirements of each individual user. Wheel type and coupling system are optional. The result is the Mercury A-310 Trailer . . . standard of industry for efficient, low-cost, load carrying service. For complete details write for Bulletins 160 and A999.

MERCURY
FORK TRUCKS · TRACTORS · TRAILERS

MERCURY MANUFACTURING COMPANY
4132 South Halsted Street, Chicago 9, Ill.

If you write maker identify as **IEN - 2602**

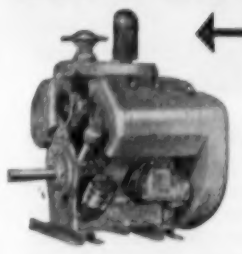


SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as **IEN - 2603**

a Bigger, Better WISCONSIN HEAVY-DUTY *Air-Cooled* ENGINE



4-Cylinder, V-Type
Model VG4D
25 to 36 Horsepower

One of the outstanding performance characteristics of this fine engine is its exceptionally smooth running. Among other things, this is accomplished by means of accurately balanced weights, forged to the cheeks of the crankshaft, counter-balancing reciprocating forces in the connecting rods and pistons.

This engine is regularly furnished with Stellite exhaust valves and valve seat inserts, with positive type valve rotators — highly desirable for prolonging the life of valves and greatly reducing the frequency of valve servicing. Rotators cause a slow rotation of valve during time it is lifted off its seat by the camshaft, providing new positioning every time the valve seats, assuring uniform wear and retarding lead or carbon build-up.

MORE *Power* TO FIT THE JOB

MORE *Power* TO FIT THE MACHINE

For equipent requiring 25 to 36 hp., specify the Wisconsin Heavy-Duty AIR-COOLED Model VG4D. Detailed engineering data gladly supplied.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 2604

TOOL CRIB CONTROL

New illustrated bulletin presents step-by-step procedure used profitably in hundreds of plants

How it works to —

- Record each employee's tools or gages, preventing theft and loss;
- Recover idle tools;
- Cut crib inventories;
- Reduce tool breakage;
- Locate each tool, loaned or in crib;
- Eliminate delays, saving man and machine time;
- Stop arguments and otherwise speed service;
- With no increase in crib personnel—

All described in Folder A-510 IEN

Procedures also available for gages, gage inspection, kits, permanent loans, blue prints, etc. Readily adapted to unusual requirements.

Write for your copy today

McCaskey INDUSTRIAL CONTROLS
PRODUCTION · INVENTORY · TOOLS · COSTS · MAINTENANCE
THE McCASKEY REGISTER DIV.,
Victor Adding Machine Co.
ALLIANCE, OHIO
Galt, Canada Watford, England

If you write maker identify as IEN - 2605

MODERN TIME AND COST SAVERS BUILT BY... Standard

GRAVITY & POWER CONVEYORS

LIFT OR LOWER— FLOOR TO FLOOR WITH A

STANDARD INCLINEBELT

Move boxes, cases, cartons, sacks or bundles from basement to first floor, or any floor to floor — continuously with the Standard Inclinebelt. Compact — simple to install — minimum maintenance and attention. Lifts or lowers 10 to 20 lbs. of live load per ft.; floor elevations of 8 ft. to 14 ft. 6 inches inclusive; two belt widths to handle commodities 15½ inches to 25½ inches wide. Electric motor operated. Write for INCLINEBELT Bulletin — address Dept. IEN-34.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

If you write maker identify as IEN - 2606

Buschman Wheel and Roller CONVEYORS

Custom Systems from Standard Units

Gravity conveying systems to meet your needs are set up quickly from Buschman wheel and roller components. Lightweight aluminum or steel construction and Quick-Eez coupling make rearrangement fast and easy.

Buschman wheel and roller components include straight and curved sections in three widths, switches, adjustable tubular stands and accessories.

Buschman wheel and roller conveyors are stocked at the factory and by leading distributors throughout the country, who can engineer systems to meet your needs.

Write today for Bulletin 15

Complete Conveyor Systems For All Types of Industries
Engineered • Manufactured • Installed

PRODUCE MORE . . . FOR LESS
Buschman Conveyors

THE E. W. BUSCHMAN CO.
4447 Clifton Ave. • Cincinnati 32, Ohio

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 2607

ALUMINUM . . Color sound movie gives instructions on how to braze aluminum parts

Aluminum Co. of America
1501 Alcoa Bldg., Dept. IEN, Pittsburgh 19, Pa.

Design and fabrication of aluminum parts by brazing are two subjects covered by new 16-mm. 22-min. color sound film, "New Horizons in Aluminum Brazing." The movie shows what can be done in joining parts by brazing, using torch, furnace and dip methods. Examples include a brazed aluminum automotive engine block and head, use of sheet, tube, cast, forged.

If you write maker identify as IEN - 2608

GASES . . Color sound movie tells about atmospheric gases and how they are used

Air Reduction Sales Co.
60 E.-42nd St., Dept. IEN, New York 17, N. Y.

"Whatever We Do" is a documentary rather than technical film about oxygen, nitrogen, argon, neon and other atmospheric gases. The 16-mm. 23-min. color sound motion picture shows how these gases are separated, stored and packaged. It portrays the role of oxygen in steel making and in hospital oxygen tents, argon in electric lamps, neon in signs.

If you write maker identify as IEN - 2609

LATHES . . Color sound film describes lathe manufacture with reasons why

Monarch Machine Tool Co.
615 N. Oak St., Dept. IEN, Sidney, Ohio

"The Turning Point" is new 16-mm. 33-min. color sound motion picture on lathe manufacture that stresses the "why" and "how" behind production rather than an exposition of the machine. It shows development of new designs, quality control methods, unusual production operations and plant procedures in lathe manufacture. Please use your letterhead.

If you write maker identify as IEN - 2610

LUBRICATING . . Sound slide film shows how to handle lubricants from barrel to bearing

Alemite Div. Stewart-Warner Corp.
1826 Diversey Parkway, Dept. IEN, Chicago 14, Ill.

"No Margin for Error" titles new 35-mm. 15-min. color sound slide film. It takes you into a typical industrial plant, shows right way and wrong way to handle lubricants from original shipping container to point of use. It presents five plans on lubricant handling. These range from the simplest, hand guns and loader pumps, through bucket pumps and transfer pumps, portable power guns and transfer pumps, power operated barrel pumps, to complete lubrication department on wheels. The company can arrange for showing in your plant.

If you write maker identify as IEN - 2611

PAINTING . . Instruction film on techniques of spray painting and care of equipment

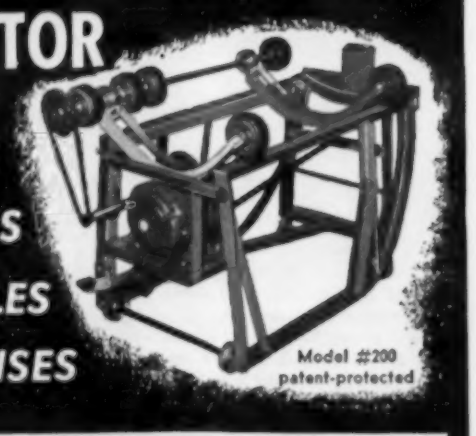
DeVilbiss Company
300 Phillips Ave., Dept. IEN, Toledo 1, Ohio

Equipment required is described at the start of new 16-mm. 45-min. black and white sound film, "Making the Most of the Spray Painting Method." Functions and operation are detailed. Then the film shows how instruction is given in the company's school to an industrial finisher, a maintenance painter and an automobile refinisher. Care of equipment is pictured.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2612

inexpensive MORSE portable ROTATOR



- MIXES
- BLENDS
- TUMBLES
- CLEANSES

In 30 to 55 gal. drums, 1 to 5 gal. cans at rotating speeds 10 to 40 rpm. The four drive-wheels have Neoprene treads, resistant to paint and oil. The idler wheels have Torrington Needle Bearings for smoother operation. Easily loaded—frame has retractable casters. Various speeds are secured through chain sprocket reduction. Morse Model #200 Rotator weighs 115 lb. Write for Bulletin 348 and free folder showing complete Morse line or Drum and Barrel Handling Equipment.

MORSE MANUFACTURING CO. INC.
755 West Manlius St. East Syracuse, N. Y.

If you write maker identify as IEN - 2613

AMES

...the preferred

... not because they cost more (in the long run they're more economical) but because they're completely impersonal!

Ames Micrometer Dial Gauges and Indicators meet the demand for increasingly critical precision instruments. They are built by exclusive Ames methods and machines, and 100% checked for accuracy. They are extremely sensitive yet ruggedly built to give you *longer* service with *less* down-time.

Send today for your free copy of Catalog No. 38

Representatives in principal cities. B. C. AMES CO. *33 Ames Street, Waltham 54, Mass.*
Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN - 2614

NEW PRECISION DYNAMOMETER

For determining the force required to actuate delicate mechanisms.

Here is a new instrument that has quickly become an indispensable aid to measure, calibrate and standardize the pressure or power required to actuate fine precision mechanisms and spring tensions of ELECTRIC CONTACTS - RELAYS - CLOCKS - TELEPHONES - BUSINESS MACHINES - MICRO MOTORS for Electric Razors - WINDSHIELD WIPERS - TIME SWITCHES - ETC...

THE DYNAMOMETER IS AVAILABLE IN 2 SIZES WITH OPERATING PRESSURES RANGING FROM 5-15 GRAMS TO 100-1000 GRAMS.

WRITE FOR ILLUSTRATED FOLDER

GEORGE SCHERR CO., Inc.
200-EN Lafayette St. • N. Y. 12, N. Y.

If you write maker identify as IEN - 2615

GOOD NEWS *FOR GLOBE VALVE USERS*

FAMOUS OSTLIND VALVES
now called
"GYROSEAL"
are back

Thousands of satisfied users report their original Ostlind Valves still on the line after years of exceptional use. GYROSEAL Valves retain the exclusive patented features. The disc revolves freely, keeping particles in suspension while the disc gently laps the seat for perfect closure.

Materials now used in GYROSEAL Valves assure trouble-free use not only in steam lines but also where the most corrosive fluids are involved.

Write for Fully Descriptive Brochure

THE RICHMOND FOUNDRY & MANUFACTURING COMPANY, INC.
DEPT. B, RICHMOND 20, VIRGINIA
Exclusive Producers of the GYROSEAL Valve

If you write maker identify as IEN - 2616

Easy to use . . . Easy to clean . . . Easy to service

DERBY SEALER — MODEL 32 GUMMED TAPE DISPENSER

For Shipping Room and Production Line Packaging

- Rugged simplicity aptly describes the Model 32. Derby's exclusive, one-piece solid casting eliminates parts and provides added rigidity. What's more, the Model 32 is easy to clean, even during the hot summer months when machines tend to "gum-up."
- The Derby Model 32 accommodates any tape from 1" to 3" wide. Delivers from 4 inches to 34 inches of tape at one stroke.
- Derby's exclusive "moisture-control" system maintains a maximum high water level in the tank to assure a constant supply of water to the brush, no matter how fast tape is dispensed.
- Also available is the Model 32-T with tool steel shear-type blades for cutting reinforced strapping tapes. Blades have two cutting edges to double their useful life before resharpening.

For further information, write Dept. IF

DERBY SEALERS, INC.
Derby, Connecticut

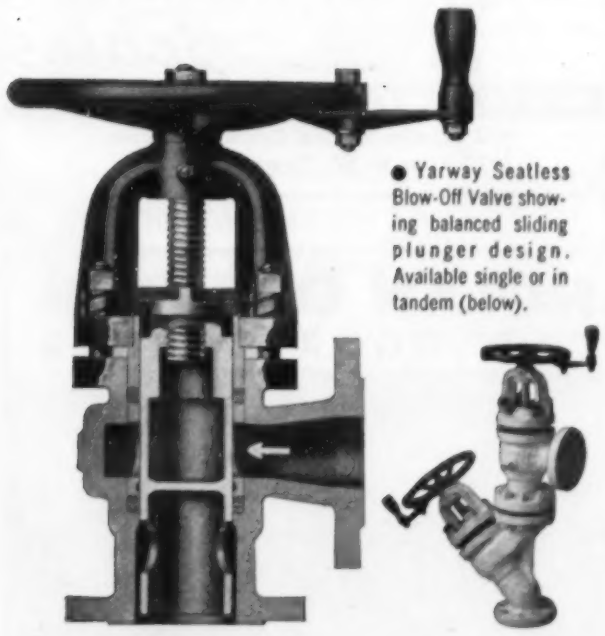
If you write maker identify as IEN - 2617

KEEPS BOILER BLOW-DOWN LINES *DROP TIGHT*

Yarway Seatless Blow-Off Valves keep blow-down lines *drop tight* because *there is no seat to score, wear, clog or leak.*

The well-known balanced sliding plunger design—combined with the newest metallurgical developments—make Yarway Seatless Blow-Off Valves rate top efficiency for low and medium pressure boiler plants.

Among high pressure plants, Yarway Unit Tandem Valves are used by more than 4 out of 5.



● Yarway Seatless Blow-Off Valve showing balanced sliding plunger design. Available single or in tandem (below).

If you operate a boiler, be sure to send for the Yarway Blow-Off Valve Books—Bulletin B-426 for pressures to 400 psi or Bulletin B-433 for higher pressures to 2500 psi. Write . . .

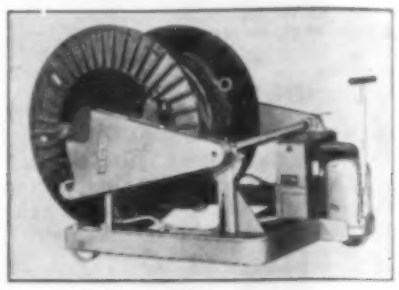
YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.
BRANCH OFFICES IN PRINCIPAL CITIES

YARWAY blow-off valves

If you write maker identify as IEN - 2619

TRUCK . . Electric hydraulic lift for reels to 8 ton, 84 in. diameter

Source: MOTO-TRUC COMPANY
1987 E. 59th St., Dept. IEN, Cleveland 3, Ohio



Controlled at handle

A reel is picked up and cradled for movement from one location to another and to dispense or take in cable with this new battery powered motor driven hydraulic lift truck. Overall width and length of the unit shown are 6 by 6 feet. Other sizes are available to specification.

Travel speed is 2½ to 3 mph. with two speeds in forward and reverse direction. Lift movement is through 14 inches. The truck stops, and an automotive type brake is applied to the drive wheel, when operator releases steering handle.

If you write maker identify as IEN - 2620

LUBRICATING . . Cutting oil forms stable emulsion with water

Source: SUN OIL CO.
1608 Walnut St., Dept. IEN, Philadelphia 3, Pa.

Bulletin 16 upon request

The company announces improved formulation of its emulsifying cutting oil so the new material will mix easily with hot, cold or hard water to form a light stable emulsion. Low viscosity makes the oil easy to handle. Good detergent qualities improve its use as a grinding oil. It is suited for use also in hot emulsion type washers for hot rust proofing, for cold rolling steel and for other metal working operations. The oil contains no animal or vegetable fatty oils and will not turn rancid.

If you write maker identify as IEN - 2621

SANDING . . Portable pneumatic tool for composition, metal, plastic, wood

Source: SUNDSTRAND MACHINE TOOL CO.
2531 11th St., Dept. IEN, Rockford, Ill.

Anti-friction bearings

Two hose lines, one for pressure to drive the rotary pneumatic motor and the other for water to be employed in wet sanding, are connected at the rear of this new design of the company's orbital-type sander, previously described IEN-3710-51. Operating speed is to 6,000 cpm. Control is by manipulating a palm valve on the housing for flow of both the air and the water.

The tool weighs 4½ pounds. It takes 5½ to 7 cfm. at 50 to 100-lb. pressure. The abrasive paper clips hold 4 to 6 sheets, each measuring one-third of a stock sheet.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2622

Combines temperature control with a single pole switch. Current is automatically cut off and switch is locked in open position if temperature at any dial setting, through any cause, exceeds temperature range of control by approximately 7% in liquids or 12% in air. Switch remains open until closed by manual reset button. In direct or reverse acting models. Write for Catalog.

Robertshaw-Fulton CONTROLS COMPANY
ROBERTSHAW THERMOSTAT DIVISION, Youngwood, Pennsylvania

If you write maker identify as IEN - 2623

NEW MANCO HYDRAULIC RIVETER

Here's fast, silent, and powerful hydraulic riveting. Riveting cycle only one second. Easy-to-operate hand lever valve mounted on riveting head. No solenoids. Capacity for ¼" and 5/16" rivets. Adjustable pressure setting for use on straight and shoulder rivets. Riveting yoke reach is 1¾" with a gap of 1⅜" including rivet sets. Other yokes also available. Full swivel about cylinder axis permits easy placement. Compact electric hydraulic pump. Weight of riveting head . . . 18 lbs.

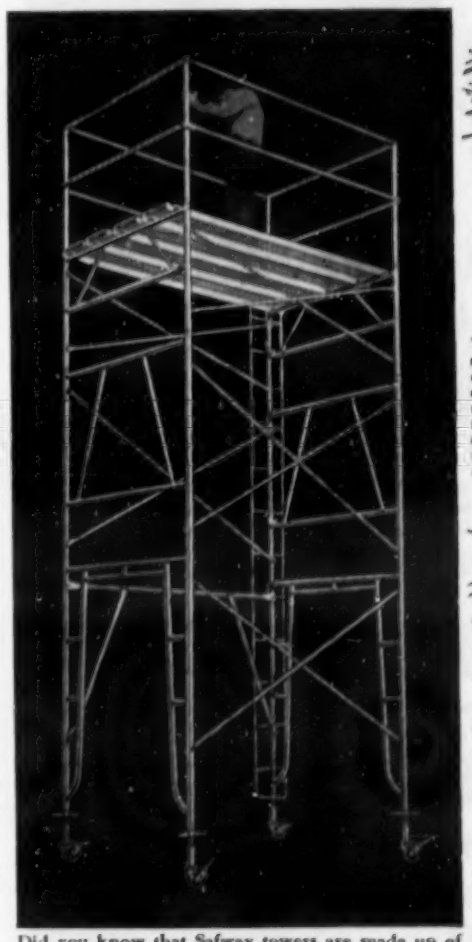
Model R-211-188E

Other Manco Riveters are available with capacities from 10 to 150 tons. Send us your riveting problem.

Dept. N-3
MANCO mfg. co.
Bradley, Illinois

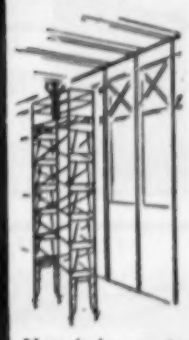
If you write maker identify as IEN - 2624

ROLLING TOWERS PUT SKILLED HANDS TO WORK EFFECTIVELY



Did you know that Safway towers are made up of standard, interchangeable parts? It is easy to make up your tower to any convenient size.

Your Safway tower simplifies the lubrication of high machines, presses and cranes and speeds the servicing of overhead motors, unit heaters and conveyor systems.



Now it is easy to work on ceiling level ducts for electric cables and buses, on steam and water pipes and line shafts.

CONSIDER THE TIME AND PROFIT you gain by SAFELY putting your skilled workers close to the job they're doing. The Safway rolling tower does just that. On maintenance and repair jobs, for example, it follows the work . . . along building walls, down corridors. It will help you put your skilled hands to work more profitably for you.

Your Safway rolling tower fits your job requirements to a "T." Not only are platforms adjustable to convenient working heights, but parts are standard and interchangeable. And your tower locks in position firmly with brakes on both wheels and swivel. The platform provides a generous working area and is protected by a sturdy guard rail.

For more facts contact one of the 137 Safway distributors near you. Or write direct for free bulletin.

SAFWAY STEEL PRODUCTS INCORPORATED
6228, West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

If you write maker identify as IEN - 2626

THE QUADRIGA MANUFACTURING CO.
215A West Grand Avenue • Chicago 10, Illinois

If you write maker identify as IEN - 2627

INDUSTRIAL AND INSTITUTIONAL
SECTIONAL TABLES
with SWING SEATS

*Formica
Edge Grain Maple
Cal-O-Lite
Stainless Steel

MAXIMUM SEATING CAPACITY IN LIMITED SPACE!

Colorful tops and wide range of enamel paint finishes add attractive new color to industrial and institutional dining rooms and recreation rooms. Units seat 4 to 24 people. Attached seats (with or without backs) swing under table to eliminate crowding, noise and confusion of loose chairs and tables. Ideal for industry, schools, hospitals and institutions.

WRITE TODAY For NEW Catalog!

DISTRIBUTORS IN ALL PRINCIPAL CITIES
The Chicago Hardware Foundry Co.
"Dependable Since 1897"
3434 Commonwealth Ave.
North Chicago, Ill.

If you write maker identify as IEN - 2628

There's no Boring Tool Like a BOKUM

For boring smooth, straight precision holes you can't beat a Bokum. Bokum tools are *designed specifically* for precision boring. All cutting and clearance angles have been figured according to a mathematical formula and thus assure most perfect results—rapidly and economically.

For best results in boring ask for Bokum tools by name.

3 Styles Available . . .
each in high speed steel and carbide-tipped

STYLE A
for general boring

STYLE B
for facing and bottoming

STYLE C
for internal threading

BOKUM TOOL CO.
SINGLE POINT BORING TOOLS · INTERNAL THREADING, BOTTOMING AND FACING TOOLS—CARBIDE TIPPED TOOLS
DEPT. N • 14775 WILDEMERE AVE. • DETROIT 21, MICH.

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 2629

ENGINEERING . . Booklet reports survey on how to attract and hold engineering talent

Professional Engineers Conference
1121 15th St. N. W., Dept. IEN, Washington 5, D. C.

Survey Number Three is reported in new 64-page booklet, "How to Attract and Hold Engineering Talent," list price $2. It summarizes experience of some 200 companies on topics such as the raw material, recruiting methods, benefits and incentives, along with recommendations and a reading list.

If you write maker identify as IEN - 2630

ENGINES . . Information booklet tells about the small two-cycle engine and its uses

Power Products Corp.
Power St., Dept. IEN, Grafton, Wis.

Chief Engineer Sheldon D. Pollow made a speech at a recent SAE meeting. His talk now is offered in 20-page reprint booklet form with the title, "Application of the Small 2-Cycle Engine to Power Equipment." In it he shows how the engine operates, design requirements and how they are met, applications ranging from chain saws to blowers that operate at minus 65 deg. F.

If you write maker identify as IEN - 2631

FABRICS . . Book on asbestos textiles describes mining, manufacture, products, specifications

Asbestos Textile Institute
Rutgers University, Dept. IEN, New Brunswick, N. J.

"Handbook of Asbestos Textiles" is new 84-page book available on letterhead request from qualified individuals. List price otherwise is $1. An introductory section describes the mineral and how it is processed into fibers. Most of the book concerns asbestos products and their applications such as yarn, thread, rope, cord, tape, tubing, cloth.

If you write maker identify as IEN - 2632

GRINDING . . How to grind magnesium and its alloys is described by set of instructions

Norton Company
36 New Bond St., Dept. IEN, Worcester 6, Mass.

Technical Bulletin 532 is a four-sheet typewritten report on how to grind and polish magnesium alloys. It starts with a description of grinding-wheel recommendations, continues with a set of polishing procedures, adds notes on dust collection, concludes with a list of safety precautions.

If you write maker identify as IEN - 2633

ALLOY IRON . . As a material for cast gears is treated in 36-page booklet with a section on design

Meehanite Metal Corp.
714 North Ave., Dept. IEN, New Rochelle, N. Y.

Easy contours, gradual section change, methods of avoiding casting strains, are among the design suggestions in Bulletin 42, "Meehanite Metal as a Gear Material". Properties of the alloy iron that suit it for cast gears, examples of such gears, reasons for using the material, possibility of flame hardening gear teeth, are typical subjects.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2634

MET-L-WOOD
METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:
- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

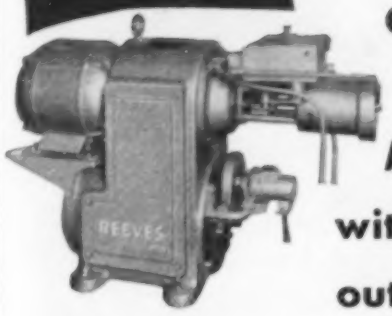
SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES
Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

Met-L-Wood is metal bonded to plywood—permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

MET-L-WOOD CORPORATION
6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood . . . *opening new horizons to structural designers*"

If you write maker identify as IEN - 2635

NEW!



REEVES Automatic Controls! . . . including Auto-Pneumatic with linear output speeds!

● *For automatically controlling liquid levels in tanks, maintaining constant temperatures, pressure, and other variables, and monitoring flow systems of liquids, gases or chemicals.*

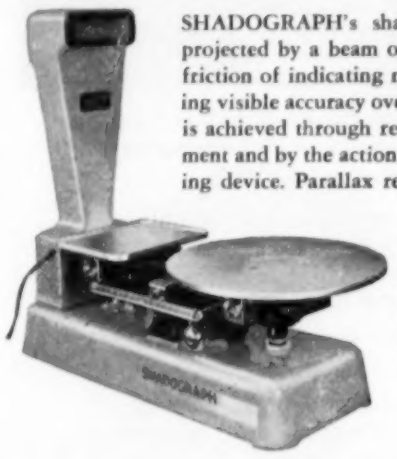
REEVES new Auto-Pneumatic control with linear output speeds is but one of a complete line of controls designed and engineered to operate your machines more efficiently, more profitably, *automatically.* Send today for your copy of REEVES new Automatic Production Control Booklet. Specify IN2a-G.

FREE!
Reeves New Automatic Production Control Booklet

REEVES PULLEY COMPANY • COLUMBUS, IND.

If you write maker identify as IEN - 2636

SHADOGRAPH . . . for Fast Precision Weighing



SHADOGRAPH's shado-edge indication is projected by a beam of light, eliminating all friction of indicating mechanism and increasing visible accuracy over 300%. Greater speed is achieved through reduction of lever movement and by the action of an adjustable damping device. Parallax readings are impossible. Available in various capacities and sensitivities. Model shown has 75 pounds capacity and is sensitive to two grams. Write for details.

Exact Weight Scales
Better quality control
Better cost control

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St. W., Toronto 18, Canada

If you write maker identify as IEN - 2637

NOLAN ONE-MAN CAR DOOR OPENER

Opens Doors in 20 seconds or less!

The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry! New chain has 2000 lbs. tensile strength.

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

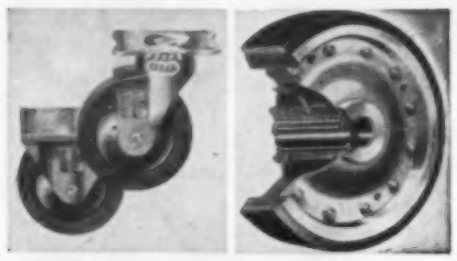
New safety features make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

MANY THOUSANDS IN CONSTANT DAILY USE! FREE LITERATURE.
Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

$37.50
F.O.B. Bowerston

THE NOLAN COMPANY • 114-C Pennsylvania St., Bowerston, Ohio

If you write maker identify as IEN - 2638



DARNELL
Casters & Wheels

Always SWIVEL and ROLL

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 2639

"SPOT the Light where you want it... LIGHT the Spot where you need it."

SWIVELIER *Adjustable*
COOLITES
Reg. U.S. Pat. Off.

PREVENT BURNS

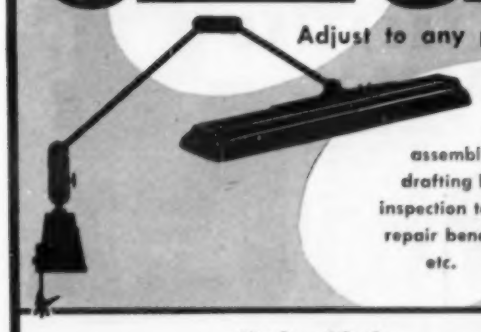
STAY COOL
Using 100-Watt Lamp

LOCKED-IN SPRING-TENSION PREVENTS DROPPING DOWN OR WORKING LOOSE.

"Never gets too hot to handle"

SWIVELIER FLUORESCENT
DEXTRA-LITES
Reg. U.S. Pat. Off.

Adjust to any position



For . . . desks, assembly tables, drafting boards, inspection tables, repair benches, etc.

Made with the
UNIQUE, SPRING-TENSION SWIVELIER SOCKET

UNIVERSALLY ADJUSTABLE
ANGLES 90° | ROTATES 360°

"STAYS PUT . . . AT ANY ANGLE!"

• ALL WIRES ENCLOSED

• For full details on Coolites, fluorescent and incandescent "Dextra-Lites" and other fine Swivelier Industrial Lighting Units
Write: Dept. IE-3 for Bulletin 134.

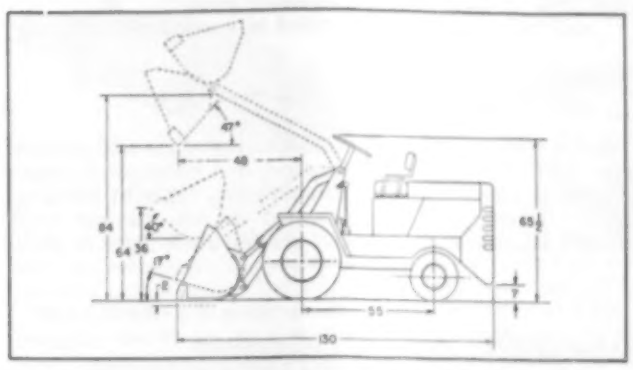
TRADEMARK

SWIVELIER COMPANY, Inc.
43—34th St., Brooklyn 32, N. Y.
Showroom: 30 Irving Place, New York, N. Y.

If you write maker identify as IEN - 2641

HANDLING . . Power shovel rates 1,500 lb. in 12 cu. ft. bucket

Source: BAKER-LULL CORPORATION
314 W. 90th St., Dept. IEN, Minneapolis 20, Minn.



Turning radius 90 inches

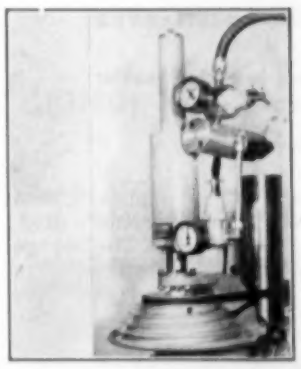
Model 20 is a new assembly in the company's Shoveloader line of bulk materials handling equipment for general production, maintenance and construction applications. It will lift 1,500 lb. to a height of 7 feet. It will suspend the capacity load in low traveling position for good forward visibility. The loader boom arms remain in front of the operator so their movement presents no danger to him.

The machine is driven by a gasoline engine and has maximum travel speed of 14 mph. with 4 forward speeds and 1 in reverse. Standard equipment includes a spark arresting muffler and a Protectoseal fuel tank. Catalytic equipment can be specified to neutralize carbon monoxide exhaust gases when the machine is to be employed in closed areas.

If you write maker identify as IEN - 2642

DRILLING . . Air-hydraulic cylinder and controls to regulate spindle feed

Source: PNEUMA-DRAULIC COMPANY
Linwood Station, Dept. IEN, Detroit 6, Mich.



Switch actuated

Rapid approach, predetermined feed and rapid retraction are provided for a 14, 15 or 16-in. drilling machine with this new air operated hydraulically controlled Rotafeed attachment. The unit clamps on the machine column by means of a bracket supplied for this purpose and secured to the bottom of the pneumatic power cylinder. A rotating piston rod, extending from the bottom of this cylinder, attaches to the drilling machine spindle. Rapid approach and feed adjustments are made inside the hydraulic cylinder that mounts at the top of the assembly.

Air pressure is provided at 40 to 60 lb. for the downward movement and at 10 to 15 lb. for the return stroke by two regulators that are included as a part of the standard equipment. Selection of movement, in one direction or the other, is by a 4-way solenoid valve that mounts between the two regulators. Complete equipment includes a ¼-in. Filter-Lube unit and the necessary rubber hose and fittings.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2643

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM CO.

"MX" ABRASIVE PRODUCTS . . . Versatile, fast-cutting, self-cleaning, safe, long-lasting

"MX" abrasive products by CARBORUNDUM do such varied jobs as reducing and blending stainless steel welds in one operation... cleaning out dainty designs on sterling silver...cutting through one inch black pipe in seconds.

Fast-cutting, they finish as they cut. The special "MX" bond provides "cushion action"—reducing vibration and giving a smooth, uniform finish.

Self-cleaning. "MX" abrasive products cut clean ...resist loading even on soft metals, such as aluminum, or on plastics, glass and other non-metallics.

Safe—they resist impact and heat shock. They operate efficiently, safely—on portable or stationary equipment.

Long-lasting—"MX" abrasive products remain usable right down to the arbor, shank or nut.

"MX" abrasive products come in seven useful forms: straight wheels, mounted wheels, sticks, depressed center wheels, discs, general purpose cut-off wheels, and production cut-off wheels.

Get full information from your CARBORUNDUM distributor today. Or send for your free copy of "MX Products" by circling the inquiry number—or write to us, addressing Dept. IEN 81-310.

"Carborundum" and "MX" are registered trademarks which indicate manufacture by the Carborundum Company, Niagara Falls, N. Y.
81-310

THE CARBORUNDUM COMPANY
Niagara Falls, New York

If you write maker identify as IEN - 2644

Be fresh... Stay fresh

wear a
DUPOR No. 4
THE RESPIRATOR FOR DUST, FUMES, PAINT SPRAY

Double filters provide easy breathing. Soft rubber face mask gives air-tight fit. Sanitary face cloth protects against dermatitis or chafing. Has patented DUPOR valves for "controlled breathing," and panorama view without blind spots. A prime favorite for years!

Sample sent $2.00 *ppd*

H. S. COVER, South Bend, Ind.

If you write maker identify as IEN - 2645

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN - 2646

PETERS-DALTON Inc.

saves engineering, fabricating, and installation costs using PLATECOILS
REPLACES PIPE COIL

Peters-Dalton, Inc., Detroit, Michigan, has found it is less costly to buy Platecoils than to fabricate their own pipe coils. Platecoils are installed in a fraction of the time without the complicated racks needed for pipe coils. They have also simplified engineering and estimating. Considerable time is saved by the standard charts of sizes and capacities.

Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL
Division
Tranter Mfg. Inc.
LANSING 4, MICHIGAN

If you write maker identify as IEN - 2647

SATISFACTION GUARANTEED and YOUR MONEY BACK

Faster, neater bagging . . . at lower cost . . . pays you many times the price of this easy-to-use bagger. Blower opens bag; your operator fills and removes it in one swift motion. Adjustable for bags from 2¾ to 5 inches wide and 5¾ to 7½ inches high. Glad to quote for other sizes or cellophane.

TRIAL OFFER

Use this bagger a full week. Be 100% satisfied or return it for refund.

Just send samples of your bags and ask for Bulletin B-35

Anderson Bagger

$65 complete, f. o. b. Rockford

Anderson

ANDERSON BROS. MFG. CO.
ROCKFORD, ILLINOIS

If you write maker identify as IEN - 2648

"TOOL UP" for your cleaning jobs PREVENT FIRES

with HYPRESSURE Jenny STEAM CLEANER

You'll find a new source of savings and profits, plus greater plant safety, when you "tool up" for cleaning jobs with Hypressure Jenny Steam Cleaner. Jenny removes grease, cutting oils, and protective coatings from machinery, equipment, sub-assemblies, and castings, before repair, repainting or machining—ten times faster than by ordinary methods! It promotes safety by eliminating the fire hazard of greasy conveyor chains and floors, and the use of inflammable cleaning solvents. It cleans ribbed glass windows; keeps floors and runways free of dirt and grease for safer, faster plant traffic, and often reveals damaged or worn parts for repair before production delays or breakdowns occur. Jenny does most any cleaning job for one-tenth the cost of cleaning by hand. So find out how easy it is to bring these savings and safety to your plant.

Send for Catalog today for full facts.

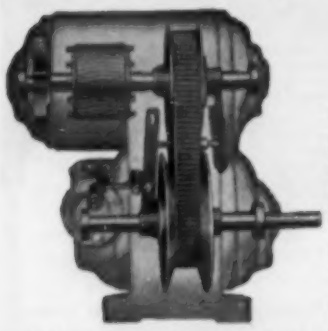
HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING CO.
Serving Since 1892

P. O. BOX 85 CORAOPOLIS, PA.

If you write maker identify as IEN - 2649

PRODUCTION UP 300% POWER COST DOWN

Through modernization of equipment with Speed-Trol, one machine now does the work previously requiring several machines. Power consumption and maintenance have been reduced, production has been increased 300% and less installation space is required, reports Raymond P. Shelter of Dugan Brothers of New Jersey, Inc., bakers of over one hundred and seventy-five varieties of pure foods.



STERLING SPEED-TROL

OUTSTANDING FEATURES: Infinite speeds—positive speed regulation—fingertip control—large indicator—positive pulleys—no springs—belt tension in proportion to load—protected—streamlined—Herringbone Rotor—through ventilation—versatile mounting—NEMA dimensions—shock absorbing—quiet operation—rugged—compact—dependable—long life.

20-page illustrated catalog... Sterling Speed-Trol, Slo-Speed, Klosd and Klosd-Tite Electric Power Drives. Write for catalog No. C-422.

STERLING ELECTRIC MOTORS

Plants: New York City 51; Chicago 35; Los Angeles 22; Hamilton, Canada; Santiago, Chile. • Offices and distributors in all principal cities.

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 2650

LIGHTING . . Cold cathode fluorescent lamp and its applications are detailed in a new booklet

Fluorescent Lighting Association
100 W. 42nd St., Dept. E, New York 36, N. Y.

How a fluorescent lamp works, features of the cold-cathode type, auxiliary equipment, electrical and photometric characteristics, how to calculate illumination, types of fixtures, typical installations, are presented in new 52-page Cold Cathode Handbook. The booklet carries a list price of $1.

If you write maker identify as IEN - 2651

MANAGEMENT . . Depreciation of equipment is the subject of new 48-page booklet by the MAPI

Machinery & Allied Products Institute
120 S. La Salle St., Dept. IEN, Chicago 3, Ill.

"Realistic Depreciation Policy" is a summary of a forthcoming book to make available its principal findings. It is not a substitute. The booklet covers subjects of tax depreciation in the United States, deficiency due to dollar shrinkage, reform of write-off and accounting methods. It lists at $1.

If you write maker identify as IEN - 2652

METALS . . A look at the future based on "created metals" such as cemented carbides

Carboloy
11167 E. 8-Mile Road, Dept. IEN, Detroit 32, Mich.

Forward step in mass-production machining made possible by cemented-carbide tools is one of several developments described in new 28-page brochure, "Carboloy Created-Metals." Others include Alnico-type permanent magnet, Hevimet, and thermistors. The booklet concludes with a look at automation.

If you write maker identify as IEN - 2653

METALS . . Annual review of the silver market is presented in pocket booklet

Handy & Harman
82 Fulton St., Dept. IEN, New York 38, N. Y.

You may be interested in a copy of the company's 38th Annual Review of the silver market if your company's products have anything to do with the precious metal. The 28-page pocket booklet reviews developments in 1953, presents figures on production and consumption.

If you write maker identify as IEN - 2654

PUMPS . . Instructions on care of centrifugal pumps apply to all makes

Allis-Chalmers Mfg. Co.
909 S. 70th St., Dept. IEN, Milwaukee 14, Wis.

Steps in building a pump are the basis of description in 16-page Bulletin 08-X-6256A, "Handbook for Care of Centrifugal Pumps." As each step is added, reasons for maintenance become apparent. There is a set of 34 causes and cures for trouble, a group of tables and instructions on how to figure head, and a suggested maintenance timetable. Information applies to all centrifugal pumps regardless of make or type.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2655
A PAID NEWS ADVERTISEMENT BY PREMIER CO.

NEW ALL-PURPOSE FLOOR MACHINE FOR HEAVY-DUTY INDUSTRIAL USE

Premier Company, a famous name in industrial vacuum cleaners, introduces a new line of floor machines with the Premier All-Purpose Floor Machine designed for heavy-duty industrial use. Premier All-Purpose units thoroughly scrub, wax, polish, shampoo, buff, dry clean, grind and sand all types of floors.

Featuring built-in balance, the new Premier units are easy to operate, will not skip or jump. Low in cost, Premier Machines feature the newest improvements in the market to save money on the first day of use. Are designed to clean floors thoroughly and quickly to give custodians more time for other important duties.

Low unit height of 12" and adjustable handle permit cleaning of hard-to-reach areas. G-E heavy-duty motor and newest ball-bearing silent gear train practically eliminate maintenance. Available in three sizes: 13", 15", 18". Necessary attachments included. Complete information given on request without obligation. Write to Premier Company, Dept. 404, 755 Woodlawn Avenue, St. Paul 1, Minn.

If you write maker identify as IEN - 2656

OLD WAY. Two or three men needed

SABIN labor saving BARREL TRUCK→

NEW WAY. The Sabin way. Only ONE man needed.

Saves labor because it makes it easy for one man to pick up and move containers up to 800 pounds—a job that requires one or two helpers with an ordinary truck. Loads are picked up by simply running truck up to container, hooking on at top and pulling back on handle. *Third Wheel feature* assures an extra measure of safety in moving loads.

WRITE FOR BULLETIN No. 48-A

THE SABIN MACHINE CO.
6540 Carnegie Avenue Cleveland 3, Ohio

If you write maker identify as IEN - 2657

Your Costs Will Slide Down Too

Although the PEDRICK PRODUCTION BENDER shown is bending two "D" sections simultaneously for sliding board rails—the same machine is used for bending pipes, tubes, reinforcing bars and structural shapes, by merely changing the die on the central spindle. Most bends can be made in multiple. The automatic duplicate bending feature, included on all models, greatly increases accuracy and production.

Write For Descriptive Folder, Dept. 7

PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St. Philadelphia 40, Pa.

If you write maker identify as IEN - 2658

Hotpack ELECTRIC HEAT TREATING FURNACES

SPECIFY Hotpack

HIGH TEMP. BATHS for Tempering Metal Cleaning • ELECTRIC FURNACES • OVENS 12 to 250 cu. ft. • TEST ROOMS • STERILIZERS • STILLS

For hardening, drawing, tempering, and annealing or normalizing of dies, punches, gages, fixtures or other parts are performed readily with these redesigned Hotpack Electric Box Furnaces.

This new Hotpack Electric Furnace is fast heating—built for continuous use from 300° F. to 2000° F. It is the only furnace equipped with Automatic Controlling-Indicating Pyrometer and also with Limitstat control in this price field.

SPECIFICATIONS

Model	Interior Size W. D. H.	Current Characteristics	Prices F.O.B. Phila.
7076	8"x8"x5½"	110 V AC 15 Amp	$230.00
7074	8"x8"x11"	115 V AC 15 Amp	$255.00
7075	12"x12"x11"	220 V AC 23 Amp	$370.00
7077	15"x15"x16½"	200 V AC 30 Amp	$575.00
7079	12"x12"x5½"	110 V AC 15 Amp	$265.00

THE ELECTRIC Hotpack COMPANY, Inc.
5049 COTTMAN STREET, PHILADELPHIA 35, PA.

If you write maker identify as IEN - 2659

WHEN YOU USE "STREAMLINER" CONVEYORS

"Streamliner" Gravity Roller Conveyors are "custom-engineered" in several types to meet special as well as standard requirements. No doubt you can use such a cost cutting conveyor in your plant. To get examples of these conveyors in action, write for Bulletin 100.

"Streamliner" Gravity Conveyors • Power Conveyors • Conveyor Systems

HARRY J. FERGUSON COMPANY

125 WEST AVENUE, JENKINTOWN, PENNA.

If you write maker identify as IEN - 2660

LOW-PRICE Quality Control "TOOLS"

CHECK, MEASURE, INSPECT with this Handy

POCKET COMPARATOR

Only $22.50 postpaid

Stock No. 30,061-AS

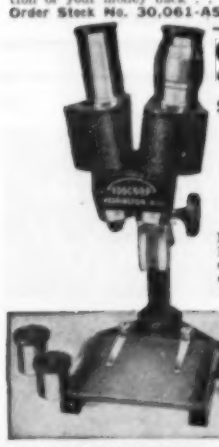
Approx. Size 1½" x 2"

6 POWER MAGNIFICATION

FAST and ACCURATE on Small Parts . . . Small Dimensions

First time available at such low price! EDSCORP POCKET COMPARATOR, fine, imported measuring magnifier — for fast, accurate inspection of intricate parts, without expensive equipment. Used to check layouts, machining on tools, dies, gauges — to check threads, chamfers, small holes. In optical work for checking flaws. Instrument comes in protective leather case. We guarantee complete satisfaction or your money back . . . Send check or money order or order on open account.

Order Stock No. 30,061-AS . . . . . $22.50 postpaid



STEREO MICROSCOPE

SAVE TIME & MONEY ON INSPECTIONS

$160 VALUE *Only* $85.00 postpaid

WIDE, 3-DIMENSIONAL FIELD

EXCELLENT WORKING DEPTH

Now, for the first time — a fine, imported Binocular Microscope at a substantial saving. Used for inspections, examinations, counting, checking, etc. Fixed 3 power objective with 3 pairs of matched eyepieces to give you 15X, 30X, 45X. Rack and pinion focusing. Interpupillary adjustment. Instrument is removable from base for mounting on machine or bench. Working distance—2¾". Adjustable for extra height. Fine hardwood case included. Recommended for lab., shop, factory or home use. We guarantee complete satisfaction or your money back.

Order Stock No. 70,011-AS, $85 pstpd. Send check or M.O., or order on open account

ALARM WRIST WATCH

For Precision Timing In Plant Or Lab!

- 17 JEWEL
- LUMINOUS
- SHOCK-PROOF

Only $49.50 postpaid

For timing of production operations, laboratory processes, experiments, or "alerting" to appointments. Imported from Germany! 17 jewel precision timepiece with luminous dial for night use. Alarm is set by turning glass rim. Tone may be adjusted to loud or soft. Watch runs 42 hours on one winding — is shock-proof, anti-magnetic. Money-back guarantee.

Order Stock No. 50,030-AS, $49.50 postpaid Send check or M.O., or order on open account

GET FREE CATALOG "AS" ***BARGAINS GALORE!***

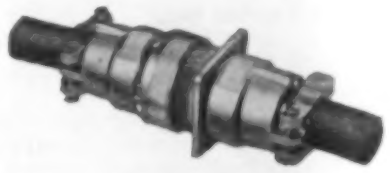
If you haven't seen our big, FREE Catalog, you don't know what you're missing. Fantastic variety—never before have so many lenses, prisms, optical instruments, and components been offered from one source. Positively the greatest assembly of bargains in all America. Imported! War surplus! Telescopes! Microscopes! Hand Spectroscopes, Prisms, Lenses, Reticles, Mirrors and dozens of other hard-to-get optical items. Write today for FREE CATALOG "AS".

EDMUND SCIENTIFIC CORP. BARRINGTON NEW JERSEY

If you write maker identify as IEN - 2662

CONNECTOR . . Multi-contact plug and socket for sealed electric circuit

Source: CANNON ELECTRIC CO.
3209 Humboldt St., Dept. IEN, Los Angeles 31, Calif.



Bulletin AN-E-1

Plug Type 3106E and receptacle Type 3100E are new designs in the company's multi-contact electric connectors. The new units include insulator and grommet design that provides for a sealed electric circuit from cable to cable, for high dielectric strength and arc resistance, to exclude water, prevent corrosion and permit a high potential test voltage and contact current rating.

Metal shells are single piece design with integral clamps except in the 90-deg. plug which employs a removable clamp. Insert materials are polychloroprene or silicone. Exterior parts are cadmium plated with a chromate finish to withstand contact with salt spray and other corrosive conditions.

If you write maker identify as IEN - 2663

ELECTRONIC PART . . Transistor performs functions of vacuum tube

Source: GERMANIUM PRODUCTS CORP.
26 Cornelison Ave., Dept. IEN, Jersey City 4, N. J.

Data sheets upon request

Hermetic sealing characterizes the construction of four new units in the company's N-P-N junction type transistor which is manufactured under Western Electric Company license and is available from stock. Four new units in the line include an RD-2517A general purpose design, an RD-2520A general purpose high quality transistor, an RD-2521A for operation at high temperatures and voltage and an RD-2525A for specialized high frequency applications. Functions, as an electronic component, include amplification, oscillation, pulse generation, pulse counting.

If you write maker identify as IEN - 2664

GRINDING . . Flexible shaft machine also to brush, drill, polish, sand

Source: STOW MFG. CO.
25 Shear St., Dept. IEN, Binghamton, N. Y.

Easy to handle

Model B38 is a new hang-up design of flexible shaft machine with a ¼ or ½-hp. motor for operating speeds at 1,725 or 3,450 rpm. The motor is connected to a 5 or 6-ft. flexible shaft. Various types of hand piece are available for machining and finishing operations in metals and non-metallic materials.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2665

Great Motors from Great Britain!

Newman Totally Enclosed Fan Cooled Squirrel Cage Motors

- world-famous NEWMAN MOTORS
- net savings up to 40%
- immediate delivery
- unconditionally guaranteed
- superior design— to N.E.M.A. standards
- offices in principal cities

For the first time, the complete world-famous line (2 million installed in 62 countries since 1935) of NEWMAN MOTORS, built to N.E.M.A. standards, is offered to the American Market.

Immediately available from our warehouse in New York in a complete range of squirrel cage and wound rotor types in sizes up to 230 H.P. *Any motor sent free and without obligation for examination and testing.*

These are new, high-quality motors stamped with the prestige of a great motor-making company. Vast savings, dependability, unconditional guarantee are offered to American buyers.

Write for a catalog and price list to-day

Newman INDUSTRIES (AMERICA) INC.

If you write maker identify as IEN - 2666

For the SMALLER HOLES — the MORE ACCURATE HOLES

HAMILTON VARIMATIC® DRILLING MACHINE

SUPER SENSITIVE VARIABLE SPEED

DRILLING CAPACITY
.004" to 0.3125"
in all drillable materials.

SPINDLE SPEEDS
840 to 9300 R.P.M.
(Infinitely variable.)

CLEARANCE
Drills to the center of 10"

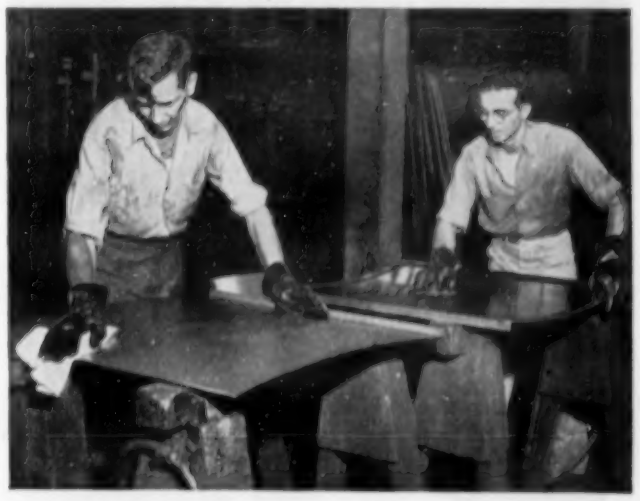
MAINTAINS PRODUCTION REDUCES SCRAP

The Hamilton Varimatic is *designed and built* for the production, in volume, of extra accurate holes.

Write for FREE Bulletin D-5311.

THE *Hamilton* TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A.

If you write maker identify as IEN - 2667



Edmont Case No. 329: Cleaning and acid-etching fabricated cab sections for cranes and shovels, prior to painting. A hazardous operation with ordinary unlined gloves because of the sharp metal edges. Edmont No. 922 gauntlets have been safely used for years. Their NEOX (reinforced neoprene) coating resists cuts and snags as well as etching acid; their flannel lining prevents skin irritations. For further economy, right and left hand gloves are individually replaced when worn out.

On big power shovels . . .

Preparing metal for paint is no problem, with job-fitted gloves

If you bought a big power shovel or mobile crane, to work outdoors in every kind of weather, you'd want it to have one of the best protective paint jobs money could buy.

To provide that kind of paint job on its famous "Lorain" cranes and shovels, The Thew Shovel Company pre-treats its fabricated sections with acid, which insures a strong bond for the paint.

The problem of handling the sharp-edged sheets and plates in the acid, 8 hours a day, without hand injuries or skin irritations, is no problem at all. For years, Thew's safety and cost-conscious management has standardized on *job-fitted* Edmont gloves. The glove used on this operation is coated with cut-resistant, acid-proof NEOX. It has a good grip, is flexible and comfortable to wear. As always, this job-fitted glove has minimized costs through longer wear, safer work handling, and resulting employee satisfaction.

NEOX, natural rubber and plastic coatings — Over-all coated or palm coated - 34 types

Free Test Offer: We are interested in helping you fit the correct gloves to your jobs. Send a brief description, on your business letterhead, of your operation, materials handled and temperature conditions. Without cost we will recommend and forward samples of gloves, for job-testing. Our laboratory also develops special gloves for conditions which our 34 standard types do not meet.

Edmont Manufacturing Co., 1226 Walnut Street, Coshocton, Ohio

World's largest maker of coated industrial gloves, available through all leading industrial suppliers.

Edmont job-fitted gloves

If you write maker identify as **IEN - 2669**

DELAVAN SPRAY NOZZLES FOR UNUSUAL APPLICATIONS

Type WD

Type WR

There is a DELAVAN NOZZLE for any flow rate from 2 quarts per hour to 63 gallons per minute.

TYPE WD — ideal for obtaining finest possible pressure atomization.

TYPE WS — available for either full or hollow cone spray. Excellent for a wide variety of special applications.

TYPE WR — a right angle nozzle producing hollow cone spray similar to Type WS.

TYPE AG — delivers flat uniform spray without concentration at edges. Drifting reduced to minimum.

Write for Catalog No. 31

Type WS

Type AG

DELAVAN MANUFACTURING CO.
GRAND AVENUE & 4TH STREET
WEST DES MOINES, IOWA

If you write maker identify as **IEN - 2670**

SEND FOR FREE BOOKLET

General Box COMPANY
1815 Miner Street
Des Plaines, Illinois

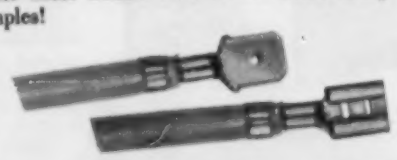
Factories: Cincinnati; Denville, N. J.; Detroit, East St. Louis, Kansas City, Louisville, Milwaukee; Prescott, Ark.; Sheboygan; Winchendon Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston.

If you write maker identify as **IEN - 2671**

are Sweeping the Electrical Industry!

More and more manufacturers are getting into the swing to AMP FASTON connectors! Timers, clocks, switches, outlets, controls—all types of electrical components when equipped with AMP FASTON tabs not only *cost less* to produce, but offer all the advantages of easier, faster wiring on the line. To install, simply push FASTON on its mating tab. Wiring is accomplished in a fraction of the time required for screw-type terminal posts!

Triple spring action and wide wiping contact of AMP FASTON provides excellent electrical connection. U.L. approved, patented, AMP F CRIMP is voidless—gives high tensile strength and resists corrosion even under most humid conditions. Write today for information and samples!



Aircraft-Marine Products, Inc.
2100 Paxton Street, Harrisburg, Pennsylvania

USEFUL INFORMATION
(Concluded)

If you write maker identify as **IEN - 2672**

PLASTICS . . Data on Teflon describes how to apply it as a surface finish

E. I. du Pont de Nemours & Co.
D-7145 Nemours Bldg., Dept. IEN, Wilmington 98, Del.

Anti-sticking, corrosion resistance, heat stability and low coefficient of friction properties of the company's tetrafluoroethylene plastic are described in 12-page Teflon Bulletin 1, Fourth Edition. The bulletin then tells how to apply available forms as surface finishes over metallic and non-metallic surfaces, the fusing operation, precautions, handling.

If you write maker identify as **IEN - 2673**

REAMING . . Instruction booklet on how to inspect and sharpen carbide-tipped reamers

Staples Tool Co.
2851 Massachusetts Ave., Dept. IEN, Cincinnati 25, Ohio

"Shop Manual" is title of 8-page looseleaf instruction booklet, dated April 1953 but just released, which will be sent on letterhead request. Drawings and photographs accompany the instructions on how to inspect carbide-tipped reamers, how to repair the outside diameter by lapping, repairing face of the flutes, sharpening dimensions, special sharpening to correct straightness of hole or to avoid other troubles.

If you write maker identify as **IEN - 2674**

RELAYS . . Useful information in 72-page booklet that reports symposium papers

Potter & Brumfield
264 N. Main St., Dept. IEN, Princeton, Ind.

Papers presented at a recent symposium on relays have been collected and published in 72-page booklet form with the title, "Symposium on Electro-Magnetic Relays." Topics include comparison of sealed and unsealed relays, selection, appraisal of design, reliability, testing, performance, military specifications.

If you write maker identify as **IEN - 2675**

TESTING . . New house publication reviews developments in instruments for product testing

Gardner Laboratory Inc.
4723 Elm St., Dept. IEN, Bethesda 14, Md.

"Newsletter" is new house publication to be issued at about 6-week intervals. It is intended to acquaint you with instruments and laboratory equipment for testing viscosity, film thickness, film adhesion and reflectance, other properties. First description in Issue No. 1 is on a counter for hardness testing. Your name will be added to mailing list upon request.

If you write maker identify as **IEN - 2676**

VALVES . . Instruction booklet on how to install the company's line blind valve

Hamer Oil Tool Co.
2919 Gardenia Ave., Dept. IEN, Long Beach 6, Calif.

Cartoon drawings in new 24-page pocket Installation Manual illustrate proper methods for placing the company's line blinds. The booklet stresses importance of proper pipe alignment, points to watch with welding-type valves, where to look for trouble when valve does not work smoothly.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2677**

Hundreds of machines available that were designed for special industry applications.

Let us know your problem. We'll be happy to submit recommendation.

If your problem is high speed coating of paint, varnish, glue, latex, etc. — POTDEVIN's sixty years of specialization in coating equipment can quickly help you solve it . . . guaranteeing initial low cost and top efficiency. Illustrated is just one of hundreds of special machines. It laminates rolls of materials up to 20" wide at speeds up to 50 feet per minute.

POTDEVIN MACHINE CO.
213 North Street • Teterboro, N. J.
Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Glueing and Labeling.

If you write maker identify as **IEN - 2678**

You Can Finish any Metal

BETTER for LESS

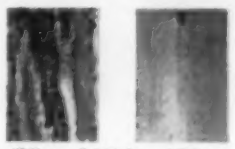
with

VINSYNITE PRETREATMENT

BETTER . . . because Vinsynite combines a chemical pretreatment with a thin film of organic coating. Result is superior adhesion and corrosion-resistance.

FOR LESS . . . because Vinsynite can be applied by ordinary painting methods. No expensive chemical control, heating, water baths or special equipment is required.

Vinsynite works efficiently on any metal. It makes finish coats last longer. Let us send you specific test data and case histories to prove it!


Effect of 500 hrs. ASTM salt spray on oleoresinous paint over bare steel (left); and same paint over Vinsynite (right).

SPECIALTY COATINGS, INC.
Division of
THOMPSON & COMPANY
1000 Allegheny Ave., Oakmont, Pa.

GET THIS FREE BOOKLET. It tells how Vinsynite is solving paint adhesion and corrosion problems for many manufacturers.

Vinsynite
COMBINES PROTECTION AND ECONOMY

If you write maker identify as **IEN - 2679**

Maintain Floors With Greatest of Ease

USE NEW 1954

UNICO

FLOOR MACHINES

Perfectly Balanced • Easier Operation • Better Efficiency • Greater Value • 12 to 20" BRUSH SIZES

The new easy to use Unico 1954 models are packed with features that insure top efficiency, top value, lower operating costs. Unequalled for scrubbing all types of floors sparkling clean. Any one can do an expert job. Quickly convertible for all wet scrubbing operations. Shampoo rugs and carpets right on the floor. Interchangeable attachments permit waxing, polishing, sanding, buffing, steel-wooling, all with the same machine. Supplied in 12", 13", 15", 17" and 20" brush sizes. Powerful vacuum equipment for wet and dry pick-up also available. Send for details now!

UNITED FLOOR MACHINE CO., Inc.
7721 South Chicago Ave.
Chicago 19, Illinois

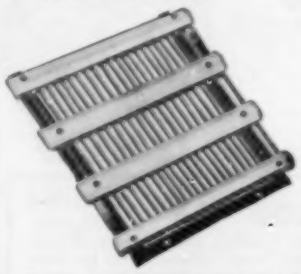
If you write maker identify as **IEN - 2680**

As Modern and Efficient as the "Jets" They Help to Build!

Equipment for processing titanium used in the construction of the newest jet planes is heated by Trent patented

"Folded-and-Formed" Heating Elements

This is another example of the many up-to-the-minute applications for these modern electric heating units . . . the last word in efficiency and reliability.



"Folded-and-Formed" Heating Elements are available as follows:
Standard 12" x 12" Racks which can be installed vertically or horizontally in various combinations, to provide the required K. W., at temperatures up to 1350°F.
Custombuilt Racks to fit any flat or curved area, to provide maximum K.W., with operating temperatures up to 1850°F.

Tell us your heating problem. It is more than probable that "F-and-F" Elements will give you the efficient heat source you've been seeking.

TREN INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA. 27, PA.

If you write maker identify as **IEN - 2681**

GLASS PRODUCTS

MADE TO *YOUR* SPECIFICATIONS

If work in your laboratory, process plant, dairy, engraving plant, textile or paper mill requires glass products made to your specifications, get Sentinel Glass Co. to do the job for you. Sentinel special glass products—tailor-made to fit the application—offer the advantages of:

- **TRANSPARENCY**
- **NON-CONTAMINATION**
- **RESISTANCE TO CORROSION**
- **LOW INSTALLATION AND MAINTENANCE COSTS**

Whether you need spirals, beakers, retorts, etc. in odd shapes and sizes or the drilling and grinding of glass, write or phone. We'll give you an estimate promptly and any additional information you may require.

SENTINEL GLASS CO.
HATBORO, PENNA.

Phone
Osborne 5-5700

If you write maker identify as **IEN - 2682**

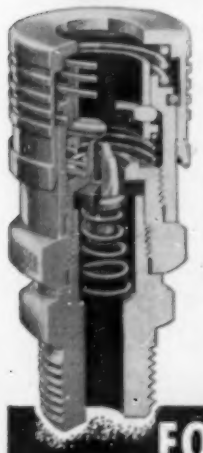
AMAZING NEW COUPLER FOR RECIPROCATING AIR TOOLS

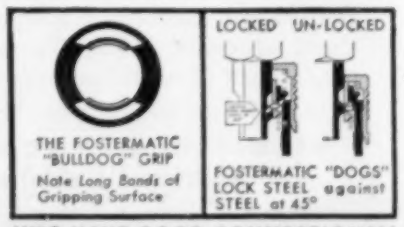
Can't Be Hammered To Pieces!

FOSTER*Matic*
QUICK DETACHABLE COUPLERS

- **Can Be Used Directly With Reciprocating Air Tools Without The Use Of Lead Hoses**
- **Will Not Fall Apart Will Not Blow Apart**
- **Steel Body and Sleeve From Solid Bar Stock**
- **Greater Air Capacity—Small Diameter—Light Weight**

*H*olds tighter without leakage, yet swivels freely, "Dogs" lock—STEEL against STEEL at 45°, and are positioned by floating steel carrier. Eliminates all usual housing wear. Write for NEW descriptive literature FM-3.





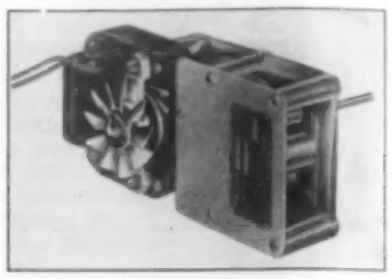
"WE HAVE GOOD CONNECTIONS"

FOSTER MFG. CO. Inc.
2850 GRAVOIS • ST. LOUIS 18, MO.

If you write maker identify as **IEN - 2684**

MOTOR . . Miniature ac. induction with geared head, 150 in. oz. torque

Source: **LORAL ELECTRONICS CORP.**
794 E. 140th St., Dept. IEN, New York 54, N. Y.



Model 300

New motor is available in ratings of 1/600 to 1/75 hp. with output speed from 1 rpm. or more for operation on 110-volt 50/60-cycle ac. Typical unit has an output speed of 9 rpm. with 16-watt input to deliver full load torque of 150 inch ounces. Rotation can be clockwise or counter-clockwise to meet requirements of an installation.

Construction includes porous bronze bearings fed from oil reservoirs, a fan for cool operation, Nylon high speed gears, paper layer coils vacuum impregnated. Mounting and output speed can be specified to fit a given application.

If you write maker identify as **IEN - 2685**

PLASTIC . . Transparent sheet for guards, cab enclosures, windows

Source: **HOMALITE CORPORATION**
14 Brookside Drive, Dept. IEN, Wilmington 166, Del.

Free sample and bulletin on request

Homalite CR-39 is a new clear transparent thermoplastic sheet that is scratch and abrasion resistant and has excellent optical and mechanical properties. It is available in six thicknesses, between 1/16 and 1/2 in., and in sheet sizes to 48 by 60 inches. It can be machined, drilled, threaded, routed. It is particularly suited for use as protective guards for grinding wheels, as a glazing material for cab enclosures on industrial cranes, as windows for instruments, dial faces. The sheet is produced by casting and can be machined to specification.

If you write maker identify as **IEN - 2686**

TESTING . . Indexing machine presents work to grind and Brinell

Source: **DETROIT TESTING MACHINE CO.**
9390 Grinnell Ave., Dept. IEN, Detroit 13, Mich.

Built to order

Work pieces, such as cranks, gun barrels, shafts, are positioned on a pair of carriers mounted on an indexing shaft in this new Model-RCB semi-automatic machine. The parts are carried around to position them for spot grinding and then for Brinell indenting. They are delivered at the rate of 400 pieces per hour ready for inspection. The machine provides a 30-in. work opening and is operated hydraulically. It is available in modified design to meet given requirements.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2687**

OHIO

GEARS • REDUCERS

For Forty years Ohio Gear engineers and craftsmen have enjoyed an unusual reputation for turning specifications into power transmission of highest industrial quality. Ohio gears are produced by the most modern equipment and methods in gear cutting. Complete up-to-date machinery operates throughout the plant . . . cutting, broaching, milling, drilling, heat treating and grinding.

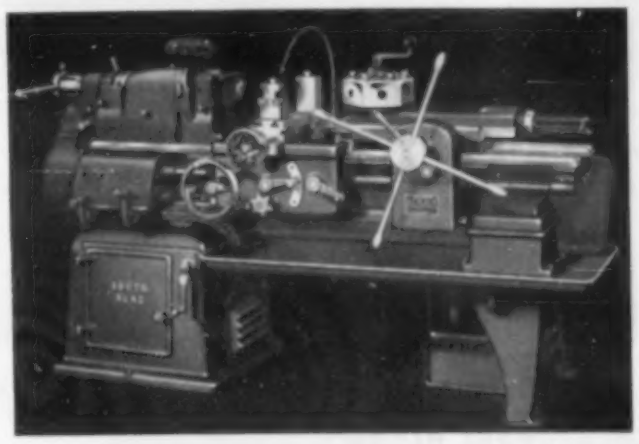
We will be glad to assist you in your gear production problems and quote on your specifications.

Distributors in principle industrial areas.

THE OHIO GEAR CO.
1345 EAST 179th ST. • CLEVELAND 10, OHIO

OHIO GEARS

If you write maker identify as **IEN - 2688**



South Bend 2-H Turret Lathe less electrical equipment **$3190** f.o.b. factory

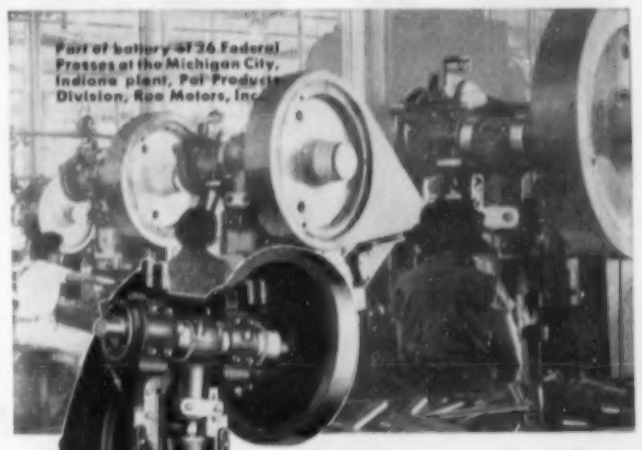
SOUTH BEND TURRET LATHE VALUE

Speed, accuracy, ease of handling, durability, low operating costs and minimum of maintenance are some of the features that make the South Bend No. 2-H a better turret lathe value. Takes 1" through collet, 1⅜" through spindle, 16¼" over bed. Full quick change gear equipment provides 48 power feeds each for turret ram, universal carriage and cross-slide, plus 48 thread cutting feeds. Prompt delivery — time payment terms available. Write for catalog.

SOUTH BEND LATHE WORKS
Building Better Tools Since 1906 • South Bend 22, Indiana

If you write maker identify as **IEN - 2689**

For faster, safer, better presswork
LEADING MANUFACTURERS LOOK TO FEDERAL . . .



FEDERAL PRESSES

No. 7 Standard Press
Capacity, 80 tons.

Here's another leader who relies on Federal Presses to speed production, eliminate accidents, maintain high quality. These rugged presses are precision-built and embody the finest materials and workmanship. Offered in four major classes—Standard, Dial Feed, High Speed and Special presses—in a wide range of sizes. Write for catalog.

FEDERAL PRESS COMPANY
503 Division St. Elkhart, Indiana

If you write maker identify as **IEN - 2690**

IT'S SHATTERPROOF!

DOUBLE wedled construction, an entirely new development in hacksaw design, gives Starrett SAFE-FLEX blades the perfect combination of hardness and toughness. The cutting edge of hard, high speed steel is reinforced with a medium hard, extra strong center and backed up with a super-tough steel back. See what the new Starrett SAF-FLEX blade can mean to you in more and straighter cuts per blade. Order a supply today.

Starrett®
"WORLD'S GREATEST TOOLMAKERS"

If you write maker identify as IEN - 2691

The badge of quality on your product

The users of your product respect the name Marsh on a pressure gauge or dial thermometer. Adopt Marsh Instruments and you will know why they have become "The Standard of Accuracy". There is a Marsh for every service.

Ask for this new catalog... It covers your instrument requirements.

MARSH INSTRUMENT CO.,
Sales affiliate of Jas. P. Marsh Corporation,
Dept. A, Skokie, Ill. *Export Dept.,* 3501 Howard St., Skokie, Ill.

If you write maker identify as IEN - 2692

...and a "Steal" at its Price!

PIC STEEL UNIONS* are priced *right.* They cost less than a galvanized, no more than a black malleable union. Yes and here's what you get for your money:

- 100% zinc plating — even threads are zinc plated to combat rust
- Easy installation — ends are uniformly flat-sided, uniformly parallel of heavy steel pipe coupling stock
- Tight seal — due to special wedge type bronze seat
- Good looks and strength — ideal for original equipment

**For 150# Service — Write for FREE Samples*

DART UNION COMPANY
130 Thurbers Avenue, Providence 5, R.I.
The Fairbanks Co. — Distributors
Boston • New York • Pittsburgh • Rome, Ga.

If you write maker identify as IEN - 2693

(Left) Ledeen Tandem Type Valve Actuator on Standard Plug Valve.

(Above) High Pressure Gate Valve with Ledeen Valve Actuator.

with

Ledeen VALVE ACTUATORS

These actuators are for the automatic operation of gate, diaphragm, plug and other line valves, and are pneumatically or hydraulically operated for direct or remote control. Designed as package units, they are mounted directly on the valves without need of special manifolds or outside supports. They are easily, quickly and rigidly installed on new valves or on valves in service.

Ledeen Valve Actuators provide positive operation, permit automatic processing, safety installations, multiple central control ,and require a minimum of maintenance. WRITE FOR BULLETIN 3000.

- Simple, Rugged Construction.
- Few Moving Parts.
- Easily Installed.
- Prompt Delivery.

Ledeen Mfg. Co.
1802 San Pedro St.
Los Angeles 15, Cal.

AIR HYDRAULIC PUMPS & BOOSTERS
VALVES · CYLINDERS · VALVE ACTUATORS

If you write maker identify as IEN - 2694

SIGNALING . . Pressure transducer converts fluid pressure to ac. voltage

Source: NORTH AMERICAN INSTRUMENTS INC.
2420 N. Lake Ave., Dept. IEN, Altadena, Calif.

For precision use

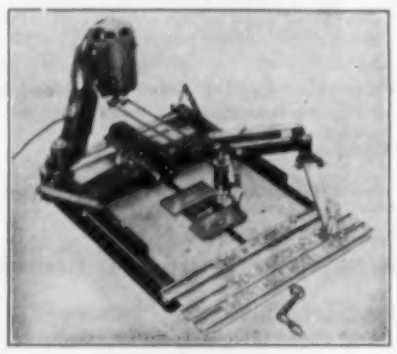
Model DP-7 is a new sensitive differential pressure transducer for application with noncorrosive gases and liquids in a working range from plus or minus 0.5 to plus or minus 15 lb. per sq. in. differential at line pressure to 100 pounds. The unit will withstand application of maximum line pressure in either direction. Its operation is based on the variable reluctance principle. Natural frequency, corresponding to a range of plus or minus 1 lb., is 1,000 cycles for second.

Applications include laboratory testing, radio telemetering and process control where precise measurement of low differential pressure is required, both statically and dynamically. The output is derived from two inductances which vary 10 per cent in opposite directions with application of full pressure. When operated in a bridge circuit at 3 kc., the full scale output is plus or minus 50 millivolts per volt with maximum excitation at 50 volts. The unit connects to a portable 110-volt 60-cycle remote indicating unit that can be supplied as an accessory.

If you write maker identify as IEN - 2695

ENGRAVING . . Pantograph machine for use on dials, nameplates, panels

Source: NEW HERMES ENGRAVING MACHINE CORP.
13 University Place, Dept. IEN, New York 3, N. Y.



$275 complete

Model I-L is a new motor driven engraving machine about the size of a typewriter. It is characterized by its portable chassis that can be lifted from the base to be set upon a work surface. The machine is equipped with a quick-acting work holder and adjustable copy holding slides.

The slides can be moved for desired letter and line spacing. The patented pantograph mechanism permits selecting 15 different sizes from one master letter. A depth regulator with a micrometer adjustment sets the cutter for flat, uneven or curved surfaces.

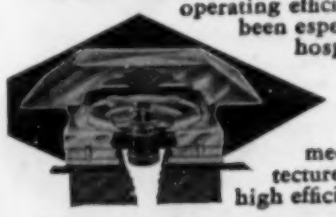
If you write maker identify as IEN - 2696

Fairfield Glove Co., Dept. IEN, Fairfield, Iowa, announces a new free service it is prepared to render in connection with its manufacture of work gloves. The service provides for printing of safety and operating slogans to customer specifications on the gloves themselves. Representative slogans are "protection pays", "think first", "be careful—live longer".

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 2697

Here's functional beauty combined with maximum operating efficiency. The new LO-SIL has been especially designed for schools, hospitals, libraries, churches, restaurants, and commercial buildings. Muckle —the most dependable name in power ventilation meets the new trend in architecture with the low silhouette, high efficiency LO-SIL VENT.



Totally enclosed motor mounted on vibration separators. Easy to install—heavy gauge steel, electric welded, 31 sizes—250 CFM to 17600 CFM.

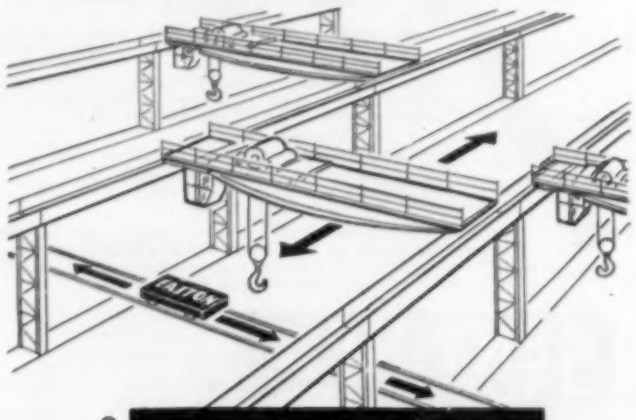
Muckle MANUFACTURING COMPANY
JWATONNA 33, MINN.

Write today for Free Application information.

If you write maker identify as IEN - 2698

Cross-Bay Transfer

Automatic motor driven transfer cars provide a universal handling system in modern parallel bay plants now served by overhead cranes. Also for transfer between plant buildings.



A-1040

EASTON

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

If you write maker identify as IEN - 2699

Nothing You Build Into Your Product *Can Count for More!*

Everyone Can Count on VEEDER ROOT

This compact Reset Counter is a standard built-in part of many makes of business machines, cameras, coin machines, compressors, die casting machines, hay balers, laundry equipment, plastic molding machines, punch presses, shoe machines . . . and what have *you?* It counts turns, strokes, pieces or other units of performance and output . . . supplying facts-in-figures that help toward closer *Count*rol. Find out how *your* product can give your customers a *new usefulness,* with these or other Veeder-Root Counters for mechanical or electrical operation. Write:

VEEDER-ROOT INCORPORATED
HARTFORD 2, CONNECTICUT
Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

"The Name that Counts"

If you write maker identify as IEN - 2701

If you write maker identify as IEN - 2702

most for the money
because . . .

- **ULTIMATE in SIMPLICITY and COMPACTNESS** — only the Graham is a straight line extension of a standard induction motor — or available without motor.
- **UNLIMITED SPEED RANGE** — from any desired maximum speed to zero, including reverse if wanted without stopping motor.
- **UNMATCHED ACCURACY** — of speed setting and resetting and speed holding.
- **NO PERISHABLE PARTS** — such as belts or tubes, requiring periodic replacement.
- **PROVED PERFORMANCE** — Fifteen years satisfactory use as standard equipment.
- **LOW COST** — a better job for less money.

Prompt Delivery on Standard Models

GRAHAM TRANSMISSIONS, INC.
Dept. IEN, Menomonee Falls, Wis.

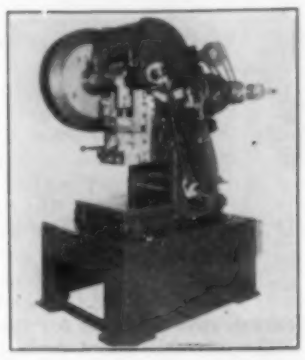
GET Graham
most reliable variable speed drive made

ENGINEERED and RATED for 'ROUND the CLOCK SERVICE

If you write maker identify as IEN - 2704

PRESS . . For automatic stamping, 90 to 350 spm., built-in roll feed

Source: PRECISION WELDER & FLEXOPRESS CORP.
138 E. McMicken Ave., Dept. IEN, Cincinnati 10, Ohio



The work flows through

Strip stock feeds from a coil through hardened stock guides and built-in feed rolls to dies mounted in this new Model C-50 Flexopress. The feed is adjustable, through an over-running clutch, to any amount maximum at 15 inches. The roll lift is adjustable for varying material thicknesses. An intermittent feed roll brake operates in rhythm with the machine in automatic operation. It is cam actuated to provide braking action only when necessary and to ride free at other times. The gears between the feed rolls remain in mesh independent of the feed roll opening.

A capillary wick on the press connecting rod insures lubrication. The ram is retained on a multiple of ball bearings operating in hardened and ground tool steel raceways for positive alignment and minimized friction. The press represents further development of the 30-ton machine previously described IEN-13237-52. It employs a C-type reinforced fabricated steel frame, stress relieved and designed so the dies are accessible on three sides.

A feature in the construction is the new Revertomatic adjustable speed drive that permits clutching the press at low speed and building up to a predetermined high speed at an adjustable rate. The press returns to low speed, upon declutching, to assist in protecting the clutch and to insure accurate operation. Maximum speed is 350 strokes per minute with the standard 3-in. stroke and a 7½-hp. motor. This stroke can be increased to 8 in. to specification at which point the speed range is 50 to 150 strokes per minute.

If you write maker identify as IEN - 2705

ISOLATING . . Vibration insulator for small motors, sensitive assemblies

Source: BARRY CORPORATION
838 Pleasant St., Dept. IEN, Watertown 72, Mass.

For grommet type applications

T-Nut is a new combination of threaded fastening and resilient material made of natural or synthetic rubber. It has natural frequency of 35 to 40 cps. for isolation of disturbing vibrations at 100 cps. or more. Two designs apply in cases where access is possible to only one side of an assembly, as in the unit shown to the left in the illustration, and one in which both sides are accessible. In the latter case the nut is threaded. In the former case the nut is bored out to clear the screw which anchors in the bottom plate.

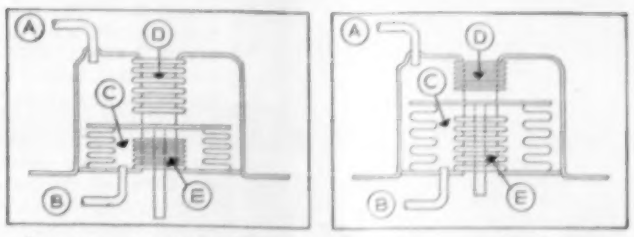
The assembly is available with screws from 6-32 to ¼-20. Four core lengths will fit through plates to 3/16 in. in thickness. Only 1/16 to ⅛-in. clearance is needed between the isolated assembly and the mounting panel.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2706

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

PRESSURE CONTROL of differential or absolute pressure provided by new differential pressure bellows assembly.



Pressure greater at inlet (A) compresses large bellows, thrusts actuating rod downward.

Pressure greater at inlet (B) extends large bellows, draws actuating rod upward.

The Clifford Differential Bellows Assembly consists of large operating bellows (C) and two smaller sealing bellows (D), (E). Pressure may be applied either inside or outside (C). Movement of the actuating rod is then proportional to the *difference* between inside and outside pressures. Either side of (C) may also be evacuated and sealed. Movement of the rod is then a function of absolute pressure. Rod can actuate switches, valves, etc., to control an indicated differential or absolute pressure.

The new unit is adaptable to all types of processes where pressure within a fluid system must be automatically equalized, or where absolute rather than gauge pressure must be maintained as in aircraft fuel systems, for example. Assemblies are made of brass, stainless steel, monel and other suitable bellows materials.

Clifford is glad to answer your questions or provide "bellows-engineering" help.

Write for bulletin: "*What To Consider When Selecting A Metallic Bellows.*"

CLIFFORD MANUFACTURING COMPANY
146 Grove St., Waltham 54, Mass.
Division of Standard-Thomson Corporation

If you write maker identify as IEN - 2707

Don't Spark a Disaster in Your Plant
Use *Ampco Safety Tools* in hazardous locations

Why take chances with ordinary tools in hazardous locations — chances that can leave your property a smouldering ruin in a few minutes? Why risk the ever-present danger of fire when the right Ampco Safety Tool can prevent expensive property damage—save lives?

Ampco Safety Tools are approved and recommended by Factory Mutual Laboratories and other leading safety authorities for use in hazardous locations. These tools provide low-cost protection wherever there is danger of fire or explosion.

Choose your safety tools from the more than 400 types and sizes that make up the Ampco line. There's one for practically every job in your plant. Order Ampco today! Get the benefit of lower insurance rates and improved worker morale.

AMPCO
AMPCO METAL, INC.
Dept. IE-3
MILWAUKEE 46, WISCONSIN

WEST OF THE ROCKIES, IT'S AMPCO BURBANK PLANT, BURBANK, CALIFORNIA • IN CANADA — SAFETY SUPPLY CO., TORONTO, ONTARIO

If you write maker identify as IEN - 2708

U.S. Royal Cords and Cables

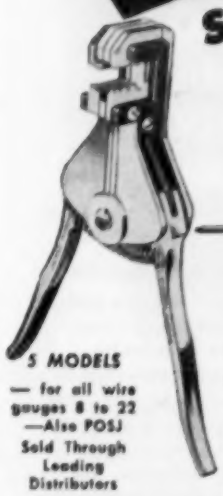
Safety Tested!

Flexibility · Dielectric strength
Smooth finish · Physical toughness

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department
Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 2709

ONE light squeeze STRIPS WIRE in 2 seconds!



IDEAL
Stripmaster®
Patented, No. 2,523,936

Fastest for all Light Stripping . . . Can't Crush Wire

Unique design gives "trigger-quick" action. Strips up to ⅞-inch. "Automatic" feature prevents crushing of stranded wire. Blade can be changed in a jiffy. Weighs only 10 oz.

5 MODELS — for all wire gauges 8 to 22 —Also POSJ Sold Through Leading Distributors

SEE ALSO THE IDEAL "E-Z AUTOMATIC" FOR HEAVY DUTY STRIPPING

OTHER WIRING TOOLS
- ☐ Voltage Testers
- ☐ Fish tape, reels and pullers
- ☐ Cable rippers
- ☐ B-X cutters
- ☐ Fuse clip clamps
- ☐ Fuse pullers
- ☐ Test lites

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please send free catalog information on Stripmaster and other wiring tools as checked.
Name.....
Company.....
Address.....
City..... Zone..... State.....

If you write maker identify as IEN - 2710

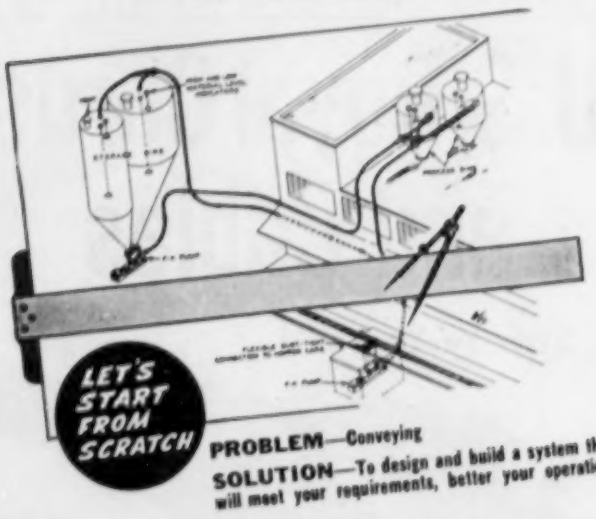
"BIG SAVINGS OF LABOR AND MATERIAL"

with portable Greenlee Hydraulic Conduit Bender

Quickly produce your own conduit bends *right on the job*. With a GREENLEE Bender *one man* in but a few minutes makes smooth, *accurate* bends in pipe up to 5", rigid and thin-wall conduit. Many owners report time and labor savings from 50% to 90% . . . and cost of many manufactured bends and fittings completely eliminated. Get facts now on this tool that often pays for itself on the first job.

FREE BENDER BOOKLET with complete data on GREENLEE Benders for pipe, conduit, tubing. Write today, Greenlee Tool Co., 1863 Herbert Ave., Rockford, Illinois.

If you write maker identify as IEN - 2711



Fuller Company designs and manufactures four primary types of pneumatic conveying systems for dry pulverized and granular materials. This permits the selection of the system best adapted to specific requirements—best equipped to handle most efficiently the materials being conveyed.

Each job is considered separately. That's why we say "Let's start from scratch" . . . when the plant is in the design stage. Then a preliminary study of local conditions can be made—and the proper equipment and layout recommended by specialists in the field of pneumatic conveying. We strongly urge all prospective purchasers to avoid preliminary engineering and to permit us to submit a recommendation or engineering study.

Fuller has a tangible resource in a personnel with many years of experience in all phases of pneumatic conveying. Fuller engineers are at your service to make a study of your requirements and to make a recommendation. There is no obligation, of course.

G67A

Fuller

FULLER COMPANY, Catasauqua, Pa.
120 S. La Salle St., Chicago 3
420 Chancery Building, San Francisco 4

If you write maker identify as IEN - 2712

Our more complete stocks mean "at once" shipments of quality fasteners when you need them—no production delays—no maintenance "shut downs."

"Chicago" quality threaded products include:

Hexagon Head Cap Screws, Bright and Heat Treated Grade 5 • Square Head and Headless Set Screws • Hexagon Nuts • Hexagon Castellated Nuts • Socket Head Cap Screws • Socket Set Screws • Socket Pipe Plugs.

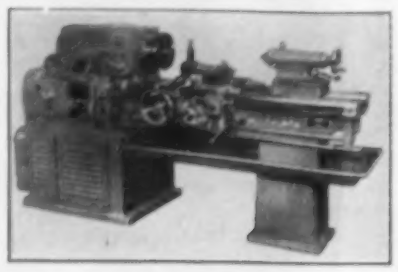
To Speed deliveries to you, order "Chicago" products from your nearest Industrial Supply Distributor. He carries a complete stock of our products—he will gladly furnish you with samples—his familiarity with your local field conditions enables him to fill your needs promptly and correctly.

The CHICAGO SCREW COMPANY
2525 WASHINGTON BOULEVARD
BELLWOOD, ILLINOIS

If you write maker identify as IEN - 2713

LATHE . . Pedestal base machine, general purpose design, variable speed

Source: HENDEY MACHINE CO.
105 Summer St., Dept. IEN, Torrington, Conn.



Electronic control

Swing measures 14 in. and stepless variable speed for the preloaded roller bearing spindle is between 15 and 1,500 rpm. on this new lathe. It is available in several bed lengths in each of which the ways are hardened and ground. There are 48 feed and thread changes. Automatic lubrication, reverse drive for the lead screw and 5-hp. dc. motor with electronic speed control are standard equipment.

Stepless speed adjustment is provided by potentiometer control of both field and armature of the dc. motor. Speed changes can be made while the machine is in operation. A thermal overload relay protects the motor. A dynamic spindle brake stops rotation quickly when the drive circuit is open. The machine connects to a 220 or 440-volt single-phase 60-cycle ac. source. Weight with equipment is about 4,000 pounds.

If you write maker identify as IEN - 2714

COUNTING . . Wheel type unit for "locating" use on a tape recorder

Source: PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Dept. IEN, Chicago 6, Ill.

The number comes up

The number wheels on this new three-wheel counter are driven by a belt connecting the counter to the tape spool spindle on a tape recording machine. The counter mounts back of a panel so only the numbers and the reset wheel are visible through suitable openings in it.

The reset wheel is employed to set the counter at zero before recording is started on a new tape. The number shown on the indicator is written into a message index as each message is started and stopped on the tape. It is possible to locate the tape to find each such message by referring to the index as the tape is re-run through the machine.

If you write maker identify as IEN - 2715

Elimistat is a new conductive liquid to "paint" on a floor where static charges may collect. The liquid dries to form a conductive surface that disperses the static in accordance with requirements of NFPA Code 56. Worn spots can be patched at any time. Walter G. Legge Co., 101 Park Ave., Dept. IEN, New York 77, N. Y., is the manufacturer.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2716

A PAID NEWS ADVERTISEMENT BY HYPRO ENGINEERING, INC.

PORTABLE PUMP . . With Vacuum Switch Eliminates "Burn Out"!

New HYPRO Portable Pump with VAC-ON Vacuum Switch!

A new Portable Pump for industrial, farm, marine and home use has now been introduced by HYPRO ENGINEERING, INC., Minneapolis pump manufacturers. Weighing only 27 lbs., the HYPRO Portable Pump incorporates a special, low-cost vacuum switch that automatically stops the motor when the liquid supply runs dry. Danger of burnt out impellers is eliminated. The pump may be operated untended and will shut off automatically when the pumping job is finished.

Design of the HYPRO unit eliminates need for base plate or special coupling between pump and motor. The pump has a hollow shaft that slips directly onto the motor shaft. It will lift water up to 10 feet unprimed, 22 feet primed, and has a capacity of up to 5 gallons per minute with pressures up to 30 lbs.

Motor for the HYPRO Portable Pump is a ¼ H.P., 110-volt, heavy-duty capacitor type with overload protector and 5-foot cord. The pump has outside threaded ports to accommodate standard garden hose couplings and a hinged carrying handle for portability. It will handle liquids ranging in viscosity from alcohol to syrups.

For complete information on the HYPRO Portable Pump with Vacuum Switch, write Dept. 103, HYPRO ENGINEERING, INC., 404 No. Washington Ave., Minneapolis 1, Minn

If you write maker identify as IEN - 2717

Years of Protection

With One Coat of

ROYSTON ALUMINUM MASTIC

Grain elevator protected by Royston Aluminum Mastic

- Protects against weathering, water penetration, absorption
- Resists corrosion by acid or alkali industrial fumes
- Ten times as thick as paint, non-reactive with other metals
- Remains flexible, won't peel, check, alligator, craze or pit
- Plasticized, for tight bond on metal, concrete or most brick
- Has heat reflective qualities typical of aluminum coatings
- Heavily pigmented with aluminum, two lbs. per gallon
- No sand blasting needed, easy to apply by brush or spray gun
- Ready-mixed, no thinner needed, covers 125 sq. ft. per gallon

Royston Aluminum Mastic is specially designed to combine a heavily embodied, corrosion resistant film with the heat reflective qualities typical of liquid aluminum paints or coatings. While the finish is not as brilliant as that of aluminum paints, it gives far greater protection against weathering and water penetration or absorption. Royston Aluminum Mastic is of the same superior quality as other Royston Laboratories' "tailor-made" protective coatings for industry.

For complete information and samples write . . . . . .

ROYSTON LABORATORIES, INC.
P. O. BOX 112-J, BLAWNOX, PA.

If you write maker identify as IEN - 2718

HAND HYDRAULIC PUMP

Single and Double Designs to 20,000 PSI

With or without Reservoir

Standard Reservoirs 70, 160, 910 Cu. In. Capacity

Interchangeable Pistons ⅜-½-¾ Inch

1-inch Piston (Special)

Pipe connections ¼" N.P.T.

Handle length is 18 inches

Unit can be bolted or welded into position

"We specialize in hand pump units to operate in temperatures from minus 65° F to plus 160° F and with any capacity reservoirs required."

The single pump with ½" or ¾" piston now available in stainless steel.

WILLIAM S. PINE
1635 E. 22nd St., Los Angeles 11, Calif.

If you write maker identify as IEN - 2719

Really Free Turning
BALL BEARING SWIVEL FITTINGS

EMSCO

FOR LIQUID GASES, STEAM, AND CHEMICALS. HOT OR COLD SERVICE. CONTINUOUS OR OCCASIONAL ROTATION.

360° FREE ROTATION—1, 2 AND 3 PLANES FITTINGS AND PRESSURES TO 15,000 P.S.I. AND TEMPERATURES TO 750° F.

Over 500 sizes, types, styles. Low pressure fittings ⅜" to 14". High pressure and high temperature ⅜" to 6". Universal service (U. S. type) fittings and pressures to 1,000 psi. Temperatures to 750° F. asbestos packed. When packed with teflon ideal for corrosive service. Gear driven types for loading racks also available.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style at right, threaded, flanged or weld ends.

EMSCO

EMSCO MANUFACTURING CO.
LOS ANGELES, CALIF.
Houston, Tex. Garland, Tex.

If you write maker identify as IEN-2720

REALOCK FENCE

saves you money

- . . . Saves cost of extra guard personnel
- . . . Cuts cost of ground maintenance
- . . . Cuts down pilferage losses
- . . . Makes possible lower insurance rates
- . . . Guards against loss from burglary and vandalism.

Consult your classified telephone directory for nearest sales office or write to any of our three division offices for free estimate or catalogue.

THE COLORADO FUEL AND IRON CORPORATION—Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION—Buffalo

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
BRANCHES IN ALL KEY CITIES

2013

If you write maker identify as IEN-2721

3 LOAD LIFTERS

Every shop can use profitably

SHOPLIFTER

Safely handles heavy dies from storage rack to press—lifts barrels, boxes—helps load trucks—or as a handy adjustable shop table. Automatic brake holds load at any height.

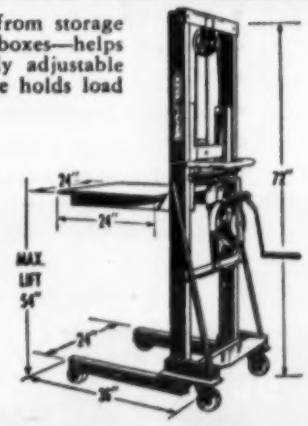
Type D — Hand operated. Cap. 500 lbs.....$183.60

Type DE—Electric operated. Cap. 500 lbs.....$412.08

Type DX — Hand operated. Cap. 1000 lbs.....$349.52

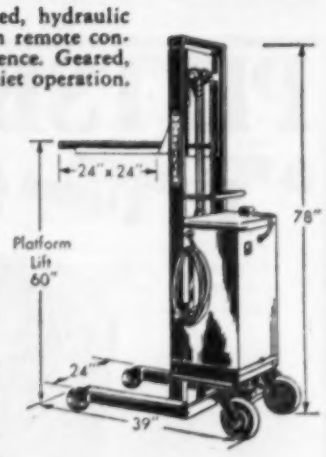
Type DX — Hand operated. Cap. 2000 lbs.....$417.52

Floor lock included. Prices net, f.o.b. Chicago.



WORKLIFTER

A low cost, battery powered, hydraulic lift hand truck. Push button remote control for operator's convenience. Geared, rotary pump for smooth, quiet operation. Sturdy structural steel frame for long service. Twelve volts (two 6 volt batteries) for fast lifting. Built-in 8 ampere charger. Power shut-off prevents excessive overload. Roller bearing wheels for easy moving by hand. Will more than double the capacity of a man in moving material. Power lifts a 750 lb. load up to 60". **Net price $695.00, f.o.b. Chicago.** Other sizes and models available — with 80" platform lift, and fork models for pallets. Descriptive bulletins on request.



ELEVATING TABLE

For feeding sheet stock, supporting fabricated frames, handling heavy dies, or as a portable work bench. Self-locking worm and screw elevating mechanism holds work at any height without danger of falling. A foot-operated floor lock holds table stationary when in use. Capacity of 2,000 lbs. Special designs can be built to suit your requirements. **Net price $210.80, f.o.b. Chicago.**

Representatives and Distributors in All Industrial Areas

ECONOMY ENGINEERING CO., 4502 W. Lake St. Chicago 24, Ill.

If you write maker identify as IEN-2723

CRANE . . Portable hand hydraulic, rates ½ ton, has 47 in. lift range

Source: STRATTON EQUIPMENT CO.
2030 E. 105th St., Dept. IEN, Cleveland 6, Ohio

About $140

The load arm in this new Hydro-Crane is pin connected to the supporting column at one end. It carries a safety hook at the other. The arm is raised and lowered, to pick up or deposit a load, by operating a hand pump in connection with a pivoted hydraulic cylinder and piston. A release valve prevents overloading. The crane is particularly suited to load and unload motor vehicle trucks.

Overall height is 72 in. and width is 35 inches. Length measures 42 inches. The load arm is 32 in. in length. Highest arm position is 92 inches. Mounting is on four 5-in. casters.

If you write maker identify as IEN-2724

ROOFS . . Corrugated aluminum now available in 0.024 in. thickness

Source: ALUMINUM CO. OF AMERICA
1501 Alcoa Bldg., Dept. IEN, Pittsburgh 19, Pa.

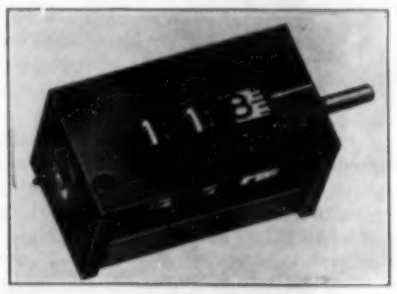
Specifications upon request

The company announces availability of a new light gage, 0.024-in., corrugated aluminum sheet for roofing and siding application as a further development of its corrugated sheet stock formerly available only in 0.032-in. thickness. The sheet is supplied with corrugations measuring ⅞-in. in depth and 2.67 in. in pitch, identical with the heavier sheet. Lengths range from 5 to 12 feet. Recommended design load ranges from 17.1 to 78.7 lb. per square foot in uniform loading with purlin spacing at 7½ to 3½ feet.

If you write maker identify as IEN-2725

COUNTING . . Wheel type indicator for servo drive, registers increments

Source: DURANT MFG. CO.
1930 N. Buffum St., Dept. IEN, Milwaukee 1, Wis.



Model 3-Y-8382

Count readings, to 150,000 increments per min., can be read on this new high speed counter. Its number wheel assembly includes a unit wheel, with 5 divisions per digit, to be read in combination with a white indicator line etched on the counter cover. The wheel characters measure 3/16 in. in height. Operation is at speeds to 1,500 rpm. Stainless steel shafts and hardened steel working parts protect against corrosion and stand up in constant duty.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-2726

MAKE ALL FLOORS

METAL, CONCRETE, AND WOOD

SLIP-PROOF

WET OR DRY

USE **R-MIR-DEK**

NON-SLIP COATING

FOR ALL FLOORS, STAIRS, RAMPS, AREAS AROUND MACHINERY AND LOADING PLATFORMS.

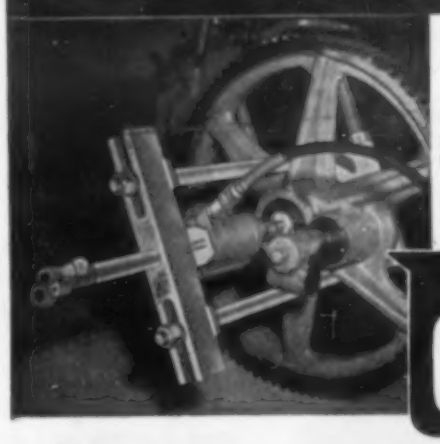
R-MIR-DEK NON-SLIP COATING is the only lightweight safety floor coating that is fire retardant, anti-corrosive, easily applied, and oil, grease, alkali, and acid-resistant. Compounded of durable phenolic resins and polymerized oils with everlasting aluminum oxide granules added. Available in white, olive drab, red, light and dark grey, sea grey, brown, regular and navy blue, black, and green.

FREE! 2-color R-Mir-Dek illustrated brochure describes this lightweight, safety floor coating. Write to Dept. IEN-3.

MIRACLE ADHESIVES CORPORATION
214 East 53rd Street, New York 22, N. Y.

If you write maker identify as IEN-2727

PUSH . . . PULL 75% FASTER 90% EASIER



WITH THE CENTER HOLE

OTC

50 TON HYDRAULIC PULLER

Removes or installs bearings, gears, pinions, shafts, studs, wheels, pulleys, etc.—75% faster and 90% easier. This new OTC 50 ton ram is completely portable (weighs only 45 lbs.)—has remote control pump—interchangeable ram heads—and can be used as a production holding fixture. Also available in 17½ and 30 ton sizes. *Booklet describes complete line and uses of OTC equipment.*

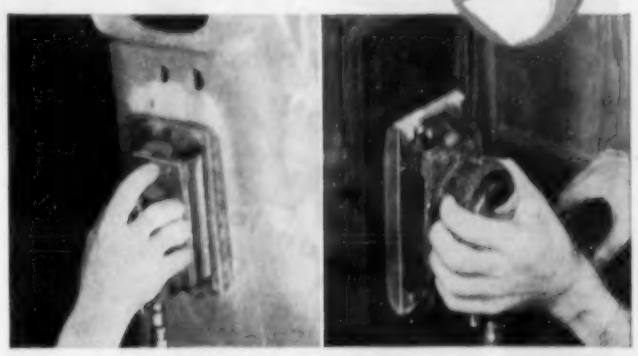
WRITE FOR FREE BOOKLET

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINN.

If you write maker identify as IEN-2728

New Orbital Air Sander makes these operations fast, simple . . .

SUNDSTRAND



Here's a high-speed, cost-cutting answer to fast material removal . . . Sundstrand's new fast-action Orbital Air Sander. Operating speeds up to 6000 cycles per minute make it ideal for sanding filler on castings, removing file and grinder marks, refinishing furniture, general maintenance sanding, etc. Its small, compact size and unique pad control permit sanding up to moldings and into tight corners . . . completely eliminating hand sanding. Machine fits snugly into hand . . . weighs just 4½ lbs. Sands wet or dry. Can be operated on 50 lbs. of air. See your supplier for a demonstration. *For finer finishes,* ask about Sundstrand's straight-line models.

SUNDSTRAND MACHINE TOOL CO., Pneumatic Division, Rockford, Illinois

SUNDSTRAND

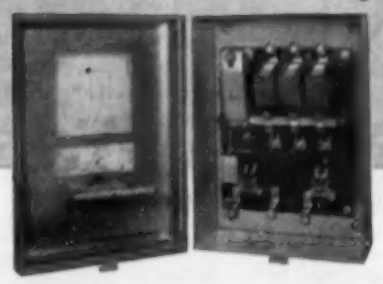
A name to remember in **AIR SANDERS**

If you write maker identify as IEN-2729

QUICK-QUENCHING

ALLIS-CHALMERS **New Size 4 STARTER**

Extends Contact Life



This size 4 magnetic, full voltage starter features a 150-amp, 600-volt contactor utilizing a quick-quenching arc centering blowout . . . a new principle of arc interruption which minimizes destructive burning and pitting of contacts. Contactor is clapper-type with single break contacts. Melting alloy-type relays provide overload protection. Starter available in general and special purpose enclosures.

There is an Allis-Chalmers starter for every motor need. Contact your nearby A-C representative or write for selection guide 14B7733, Allis-Chalmers, Milwaukee 1, Wisconsin. A-4047

ALLIS-CHALMERS

If you write maker identify as IEN - 2730

If you write maker identify as IEN - 2731

If you write maker identify as IEN - 2732

If you write maker identify as IEN - 2733

HEATING . . Electric element in panel assembly for infrared uses

Source: EDWIN L. WIEGAND COMPANY
7505 Thomas Blvd., Dept. IEN, Pittsburgh 8, Pa.

Illustrated data in Folder CS-606

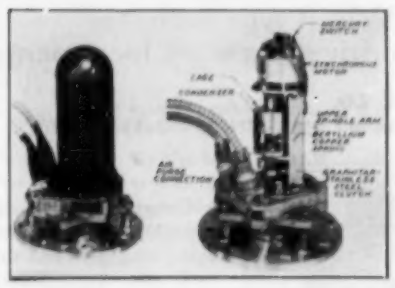
New panel size, measuring 12 by 66 in., has been added to the company's line of Far-Infrared electric heating equipment, previously described IEN-7157-52. The panel rates 15 kw. with element temperature to 1,450 deg. F. Heating intensity is 2.7 kw. per sq. ft., in the standard model, for operation on 220 or 440 volts. Special panels of other ratings are available to order for operation to 600 volts. Application is particularly in web processing operations in the paper, plastics and textile industries for setting, shrinking, stretching, pre-heating, laminating, coating.

Panel assembly includes alloy sheathed elements, reflector, interconnecting 100-amp. 3-phase bus bar, electrical and thermal insulation, all on an integral steel frame. Individual panels are mounted on structural supports. No fan or cooling equipment is required as the panel is designed to operate at 700 deg. F. on the work. Airways in the panel assembly permit preheating oven dilution air. The panel meets UL and NBFU requirements for its intended application.

If you write maker identify as IEN - 2734

TESTING . . Viscosity meter provides continuous process reading

Source: BROOKFIELD ENGINEERING LABORATORIES INC.
240 Cushing St., Dept. IEN, Stoughton, Mass.



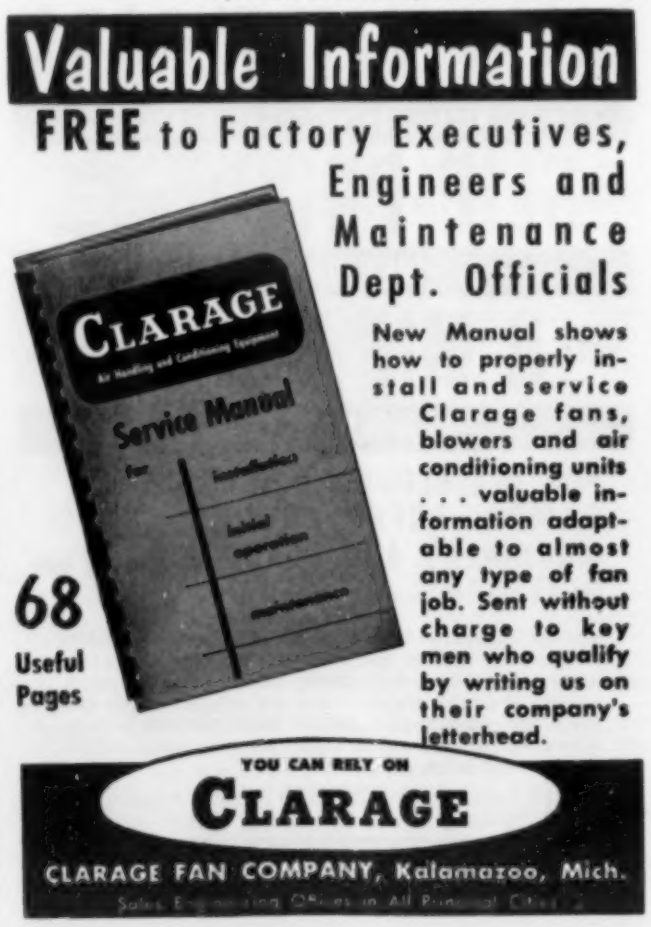
Bulletin "Viscometran"

Continuous measurement, recording and control of the viscosity of a fluid in process, can be maintained by this new Viscometran instrument. It employs a synchronous motor to rotate a spindle at constant speed in the fluid under test. Resulting torque, which is in proportion to the centipoise viscosity of the fluid, is used to generate an electrical impulse, using either a variable capacitance or a variable resistance. Viscosity is measured at the constant rate of shear at which the spindle rotates.

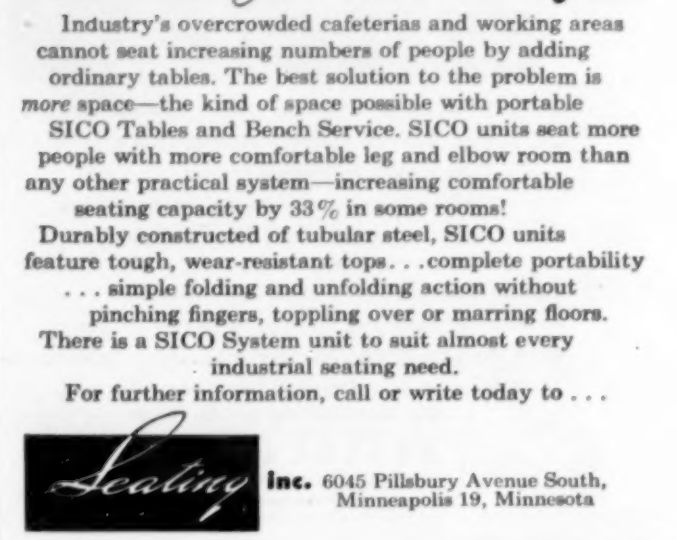
Assembly is on a 4-in. 125-lb. standard American pipe flange for application on a tank, kettle or in a flow-line by-pass. The base is hinged so the spindle can be removed for inspection, range change or cleaning. Application can be made in temperatures to 200 deg. F. and in vacuum from 8 mm. of mercury to 100-lb. pressure.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

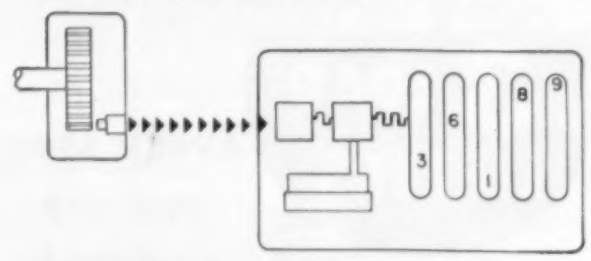
If you write maker identify as IEN - 2735



If you write maker identify as IEN - 2736



If you write maker identify as IEN - 2737



For Accurate R.P.M. Measurement

Berkeley Industrial Tachometer

FEATURES—

- Accuracy ± 1 r.p.m. for any reading
- Range 0 to 100,000 r.p.m.
- Direct digital reading in r.p.m.
- Designed for production use
- Self-testing in 2 seconds
- Does not require mechanical connection to rotating part
- Printed record if desired

Complete application data on request; write for details.

M-28

Berkeley *division* BECKMAN INSTRUMENTS INC.
Dept. Q-3, 2200 Wright Ave., Richmond, Calif.

If you write maker identify as IEN - 2738

If you write maker identify as IEN - 2739

If you write maker identify as IEN - 2740

If you write maker identify as IEN - 2742

PAINTING . . Self-adhesive masks die cut and mounted, ¼ to 4 inches

Source: BY-BUK COMPANY
4314 W. Pico Blvd., Dept. IEN, Los Angeles 19, Calif.

Samples on request

Kwiky masking dots have been added to the company's line of self-adhesive masks, previously described IEN-989-52. The units are available in diameters from ¼ to 4 in. by sixteenths. They are mounted on a backing strip, each disc slightly overlapping the next, so each raises the edge of the next to present a lip that can be gripped easily.

A string of discs can be removed from the backing, without disconnecting them, when several of one size are to be used. The adhesive will withstand temperature to 325 deg. F. for 30 min. without leaving adhesive on the work.

If you write maker identify as IEN - 2743

CONVEYING . . Insulated belt for parts and materials to 600 deg. F.

Source: IMPERIAL BELTING CO.
1752 S. Kilbourn Ave., Dept. IEN, Chicago 23, Ill.

Technical data upon request

The core of the new Sahara Armored belt is made up of stitched laminations of duck testing 750 lb. per inch of width. This core is covered with an insulating jacket made of asbestos fibers spun with reinforcing wire. The surface is treated to harden it for strength and resistance to impact. The belt is particularly suited to carry hot foundry castings and shake out sand. It is available in specified widths, thicknesses and lengths.

If you write maker identify as IEN - 2744

PROTECTING . . Respirator for workers exposed to organic vapors

Source: PULMOSAN SAFETY EQUIPMENT CO.
644 Pacific St., Dept. IEN, Brooklyn 17, N. Y.

Chemocart C-256

Chemocart C-256 is a new single cartridge chemical respirator. It carries United States Bureau of Mines Approval No. 2300 for low concentrations of organic vapors. The replaceable cartridge is contained in an aluminum housing with black aluminited finish. Weight of the respirator with the cartridge is 7.6 ounces.

The assembly includes an exhalation valve that provides immediate response to breathing. It is tension closed until opened by exhaled air. The head band is elastic.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2745

LOT LABELLING

Eliminate Shipping Labels . . . Print Direct!

Quick! Accurate! Easy! Print shipping information direct on cartons, boxes, packages. Eliminate double operation of preparing labels and then pasting them to the containers. Get 1,000 or more clear, sharp, impressions from one stencil without re-inking. New FORM-CUT® Stencil has facsimile of your label or shipping form die-impressed into the stencil . . . then type or write in address or identification data . . . attach to duplicator . . . and print, like using a rubber stamp. Write for Literature and FREE SAMPLE FORM-CUT STENCIL AND PRINT.

THE ORIGINAL HAND STAMP STENCIL DUPLICATOR

Also for addressing shipping tags and labels . . . prints postcards, menus, forms, bulletins. 8 complete outfits. $9.50 to $99.50, including supplies (f. o. b. factory). At office or shipping room supply dealers.

OVER 30 YEARS MULTISTAMP STENCIL DUPLICATOR

If you write maker identify as IEN - 2746

If you write maker identify as IEN - 2747

Best suited for hydraulic mechanisms and other applications where high pressure is required. Spur gears operate in axial hydraulic balance . . . roller bearings and bronze wear plates reduce friction under heavy loads. Splined drive shaft absorbs thrust loads. Models available with mechanical seal or packed box.

Send for Catalog
GEO. D. ROPER CORP.
203 Blackhawk Park Ave.
Rockford, Illinois

ROPER Rotary Pumps

If you write maker identify as IEN - 2748

Add an Acme Steel 25-pound coil holder

to your present wire stitching equipment

Stitch 2½ times longer without stopping

The rugged new Acme Steel 25-pound coil holder means less down time on your wire stitching operations, both because it holds 2½ times as much wire as the conventional 10-pound coil holder, and because it's easier and faster to load. Features are tangle-free wire feed and positive shoe-type brake. For details, write Acme Steel Products Division, Dept. IEN-34, Acme Steel Company, 2840 Archer Avenue, Chicago 8, Illinois.

STITCH IT...STRAP IT... SHIP IT...SAFELY!

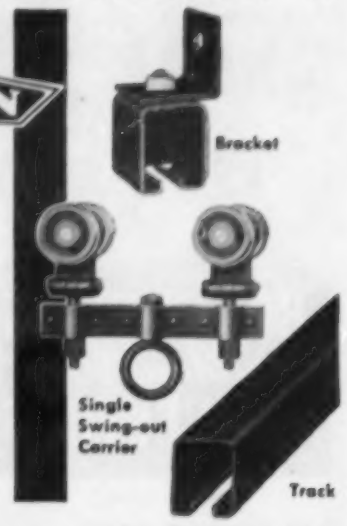
ACME STEEL

If you write maker identify as IEN - 2749

COBURN

OVERHEAD CONVEYING EQUIPMENT

simple, easy installation



Coburn track, brackets and carriers are simple in design . . . present no complicated installation problems. In fact, your own plant personnel can easily handle the job. Inexpensive re-arrangement or extension can also be made at any time because of the section design of Coburn Overhead Monorail.

Write for Catalog #220 to Coburn Sales and Engineering, 56 Sterling Street, Clinton, Mass.

THE COLORADO FUEL AND IRON CORPORATION • Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION • Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

1984

COBURN PRODUCTS
PRODUCTS OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

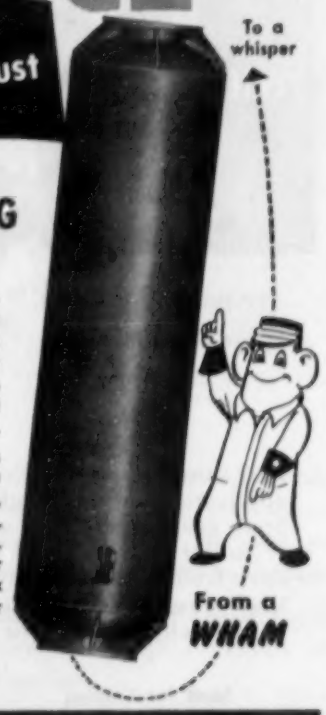
If you write maker identify as IEN - 2750

SILENCE

Those Costly Intake and Exhaust NOISES

with

BURGESS-MANNING SNUBBERS



They signal inefficient performance of your equipment and may cost you thousands of dollars annually in errors through faulty oral communications, needless nerve strain and fatigue, and result in poor neighbor relations.

Install Burgess-Manning Snubbers to scientifically silence exhaust noises from diesels, gas engines, jets, turbines, steam discharges, vacuum pumps and compressors. They offer plus values of air cleaning, heat recovery, spark arresting, surge control and water separating where required.

We invite you to submit your problems for recommendations —no obligation.

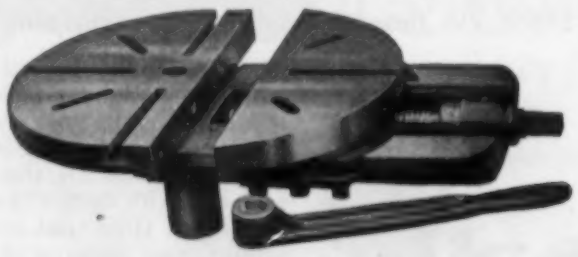
BURGESS-MANNING COMPANY
743 East Park Avenue Libertyville, Illinois

If you write maker identify as IEN - 2751

Try the MODERN

SAFETY DRILL TABLE

Under our FREE TRIAL OFFER



For Faster, SAFER Work in your Maintenance Department

Combines a drill table, a vise, a set of parallels and V block. No more lost fingers from hand held jobs that slip. No more 30 minute set-ups for a 1 minute drilling operation. Made in 6 sizes from 8" to 28" dia. We guarantee each Safety Drill Table will save its cost on labor alone in 6 months, to say nothing of plant down time when vital maintenance is delayed even a few minutes.

Write for Free Folder

Shows many typical set-ups, and use on radial drills. Complete specification on all models. Covers MONEY BACK GUARANTEE and 30 DAY FREE TRIAL OFFER.

MODERN MACHINE TOOL CO.
JACKSON MICHIGAN

If you write maker identify as IEN - 2752

VALVE . . Spinning disc design for air, gas, liquids, steam to 300 lb.

Source: RICHMOND FOUNDRY & MFG. CO.
Dept. IEN, Richmond 20, Va.

Self-cleaning action

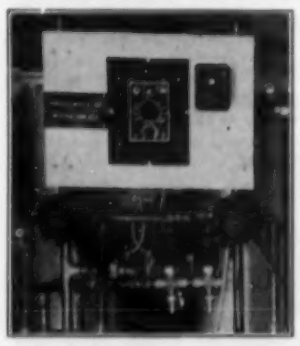
Gyroseal trade names new design of the Ostlind spinning disc valve, previously described IEN-7844-39. It is characterized by the vanes on its free rotating disc which cause the disc to spin rapidly just prior to closing down on the seat. This spinning action throws off any adhering scale or dirt so the disc is clean when it contacts the seat. Closure takes place while the disc is spinning to provide a wiping action for final metal to metal contact with the seat ring. The disc is mounted on a stainless steel ball thrust bearing which is self-cleaning in design and able to operate freely in temperatures to 950 deg. F.

Stellite in the disc and seat, to handle steam, or Hastelloy C for corrosive fluids, are subject to specification. Bronze is employed in the bonnet body and trim. The handwheel is made of Zamak. Carbon bearings are Graphitar 67. The valve is available in a 1-in. size with face-to-face dimension at 4¼ in. and height, in open position, at 9 inches.

If you write maker identify as IEN - 2753

WATER TREATING . . Control unit for automatic demineralizer operation

Source: PENFIELD MFG. CO.
19 High School Ave., Dept. IEN, Meriden, Conn.



Feeds to storage

Special controls are now available for the company's demineralizing equipment, previously described IEN - 3204 - 53. The controls provide for continuous maintenance of storage water of a predetermined purity based on conductivity. The operator starts the treating action. Then he switches to the automatic control after the regeneration cycle has been completed and is in its final rinse stage. The controls take over from this point.

The effluent runs to drain until the preset purity has been reached. It then is redirected to the storage tank until the tank has been filled. Use of the purified water from the tank lowers the level to a point where delivery is resumed. The flow will be diverted to drain if, at any time, the purity falls below the preset point. The equipment will shut down if purity is not regained within about a half hour.

Regeneration is by reversing the ion exchange action to "wash" the cation resins with an acid solution and the anion resins with a caustic to return both resins to their original active ion exchange state. This cycle is accomplished within a little less than an hour.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2754

Ask us about—

DIPPED RUBBER

PRODUCTS AND COATINGS

Take, for example, this neoprene bellows for protecting the shaft on a gear grinding machine from abrasive materials and metal cuttings. Fully as durable as a pressure molded product, it is surprisingly more economical!

This material-handling basket is dip-coated with plastisol, making it resistant to a wide range of chemicals, plating solution and solvents, enabling a complete cycle of operations to be handled in one basket. Plastisol coated baskets and plating racks effect large savings. They outlast lead or rubber against abrasion and withstand higher temperatures than rubber.

We welcome the opportunity of telling you more about the advantages of dipped neoprene products and plastisol coatings.

Spray-Dip RUBBER CORP.
2671 MAIN STREET BUFFALO 14, N. Y.

If you write maker identify as IEN - 2755

NOW . . . use ONE BENDER for pipe, angle iron, bar (flat, square and round), conduit

UNIVERSAL WRENCHLESS TYPE

Samples of Bar Bending

Use the

HOSSFELD

Universal

IRON BENDER

The compact and versatile Hossfeld Universal Bender replaces several special bending machines . . . needs no more space than a common vise. Instantly adjustable. Powerful compound leverage makes cold bends in all standard pipe and conduit sizes up to 2" I.D. Easily handles 3" x ¼" flat, ⅝" round or square and 2" x 2" x 3/16" angle iron. Can be furnished with special dies for 180° bends on thin wall conduit, steel tubing and close returns on pipe. Also available with hydraulic attachment for high speed production bending.

For Faster, Easier and More Accurate Bending . . . Specify HOSSFELD!

Write for Complete Information, TODAY!

HOSSFELD MFG. CO. 424 WEST THIRD ST. WINONA, MINN.

If you write maker identify as IEN - 2756

WHY TOLERATE

Annoying Smoke Conditions?

Grafo COLLOIDAL GRAPHITE

dispersed in various liquid mediums will eliminate Smoke and Fumes so annoying and harmful to your men in hot forging operations.

Improve Working Conditions
Obtain Better Metal Flow
Reduce Die Wear
Prevent Sticking and Galling
Forge to Closer Tolerances
Secure a Better Finish
Increase Production

•

Grafo dispersions give quality performance beyond the point where most oils are completely destroyed.

Write us regarding your special problems

GRAFO COLLOIDS CORPORATION

MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS

SHARON, PENNSYLVANIA

If you write maker identify as IEN - 2757

Speed Your Production with INFRALITE

America's Most Efficient and Economical

Radiant Heat

If your problem involves:

VULCANIZING RUBBER • DEGREASING METALS
BAKING VARNISH • HEAT TREATING LEATHER
DEHYDRATING FOOD • PASTEURIZING FOOD
DRYING LACQUER, INK, PAINT, CERAMICS
GLASS, FIBRE, COMPOSITION OR IF YOUR PROBLEM REQUIRES CONTROLLED HEAT FOR OTHER APPLICATIONS.

And if you now use:

AIR DRYING • GAS, OIL OR ELECTRIC HEAT

You will be amazed by the increased quality control and big savings in money, time and labor when you use INFRALITE RADIANT HEAT.

WITHOUT OBLIGATION, ASK OUR REPRESENTATIVE TO CALL, OR WRITE FOR BULLETIN No. 54

2079

THERMEX Company, Inc. 537 BERGEN ST., HARRISON, N. J. HU 5-2323

If you write maker identify as IEN-2758

NOW IT'S UNBREAKABLE!

Just roll it up and tuck it away!

- *Scale—convexed spring steel*—holds Slack-Tube rigid for convenient use and easy reading—regardless of length—yet permits rolling into small space for pocket or service kit
- *Zero Adjustment*—easily obtained by sliding spring-steel scale in lipped saddle.
- *Connections*—⅛" pipe thread openings and rubber tubing adapters provided.
- *Tough Vinyl Plastic Body* — will serve for years. Several inches allowed for scale adjustment.

✓ Extremely Accurate ✓ Easy to read

✓ Standard ranges from 8 to 120 inches in water or mercury

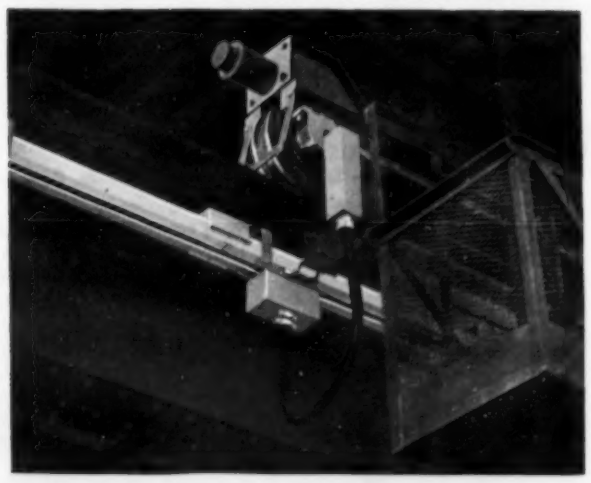
Write for complete information

DWYER *Specialized* INSTRUMENTS and GAGES

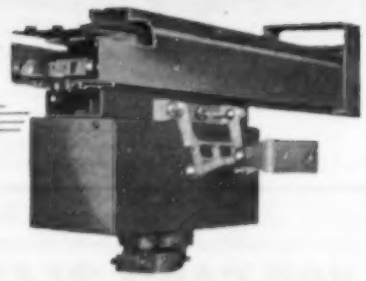
F. W. DWYER MFG. CO.
307 SO. WESTERN AVE. • CHICAGO 12, ILLINOIS

If you write maker identify as IEN-2759

safe electrification for HEAVY DUTY CRANES and HOISTS



FEEDRAIL® *Moving* **POWER SYSTEMS**



Why let Crane and Hoist wiring endanger workers or be a potential hazard to your plant? The new Heavy Duty Feedrail trolley busways give you the *safe* way because:

1. **They're a built-for-the-purpose system, designed and constructed *expressly* for high amperages.**
2. **All current carrying conductors and trolley contacts are protected every inch of the way.**

In addition to giving you maximum safety, Heavy Duty Feedrail will readily fit your specific application requirements. Its standardized components—accurately, ruggedly constructed—make for fast, easy installation. And, you'll find that its low maintenance, long life and continuous dependable service are economy factors in plant operation.

Send for Heavy Duty Feedrail descriptive bulletin. Write Dept. N-3

SOLD BY MORE THAN 1,000 ELECTRICAL DISTRIBUTORS FROM COAST TO COAST

33-2A

Never Becomes Obsolete

ELECTRIC FEEDRAIL® **FEEDRAIL CORPORATION**
Subsidiary of Russell & Stoll Company, Inc.
125 BARCLAY STREET · NEW YORK 7, N. Y.

SPECIALLY QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES

If you write maker identify as IEN-2761

DRILLING . . Carbide tipped tools, gun type, holes to 250 times diameter

Source: WHITMAN & BARNES
40600 Plymouth Road, Dept. IEN, Plymouth, Mich.

Specially made for specified work

Two types are available in the company's line of gun type drills. One has a solid high speed steel body. The other employs an oil tube body. Both are carbide tipped. The solid body is recommended when the hole is comparatively shallow. The oil tube type is employed when the hole is very deep. In both cases oil is employed under pressure to cool the cutting lip and force the chips out of the hole.

The drill takes its torque on one cutting lip and is either revolved or held stationary while the work is revolved. In some cases it is possible to revolve both. The cooling oil can be forced through the end of the shank, or through the side, depending upon the machine in which the drill is employed. Holes can be drilled in vertical or horizontal position.

If you write maker identify as IEN-2762

ADHESIVE . . Thermosetting fluid to secure the ends of insulating tapes

Source: STERLING VARNISH CO.
101 Ohio River Blvd., Dept. IEN, Haysville, Pa.

Technical data upon request

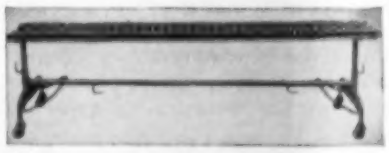
Type T-723 is a new fluid, resistant to oil and varnish solvents. It sets under heat and has been developed to glue the ends of treated and untreated insulating tapes including cotton, glass, mica, varnish cambric, teflon. It holds the ends against lifting when insulated coils are being treated with an insulating baking type varnish.

It serves equally well during the preheat interval, immersion in varnish or subsequent baking. The material also can be employed to secure fabric to metal, synthetic laminates to coil ends. Packaging is in collapsible tubes or in pint, quart and gallon containers.

If you write maker identify as IEN-2763

CONVEYING . . Caster stands to support gravity wheel type conveyor

Source: SAMUEL OLSON MFG. CO.
2418 Bloomingdale Ave., Dept. IEN, Chicago 47, Ill.



They roll freely

New stand is adjustable for various conveyor section lengths and for conveyor widths of 12 and 18 inches. Height adjustment is in four ranges, minimum at 18 to 28 in. and maximum at 40 to 72 inches. Conveyor sections, equipped with these stands, can be employed to transfer cartons, boxes, trays from one conveyor line to another as well as to and from assembly, inspection, sorting, packing and labeling operations.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-2764

WORLD'S FASTEST PIPE CUTTER GIVES MORE CUTS PER SHARPENING

The portable Gaines-Collins E-Z Cutter, fabricated of aircraft aluminum, weighs only 100 lbs.—yet it cuts pipe, tubing, or conduit from ⅜" to 4½" O.D. faster and cleaner (for example, it will cut a 1" pipe in only 4 seconds). With special adapter (optional at extra cost) cutting range goes down to ⅜" O.D.

Patented power-driven rollers revolve the pipe or conduit for constant cutting—no slipping. Cutter wheel does not wear in just one spot—and you get many more cuts per sharpening.

Adjustable roller type pipe supports allow any length of pipe, in all pipe sizes, to be cut without changing supports. Convenient foot switch leaves operator's hands free . . . speeds cutting!

GAINES-COLLINS
QUIJADA TOOL DIVISION
5474 Alhambra Ave. Los Angeles 32, Calif.
Manufacturers of Automatic Threaders and Cutters for more than a Quarter Century
Write today for new catalog IEN-3

If you write maker identify as IEN-2765

Tie 'em right! Tie 'em tight!

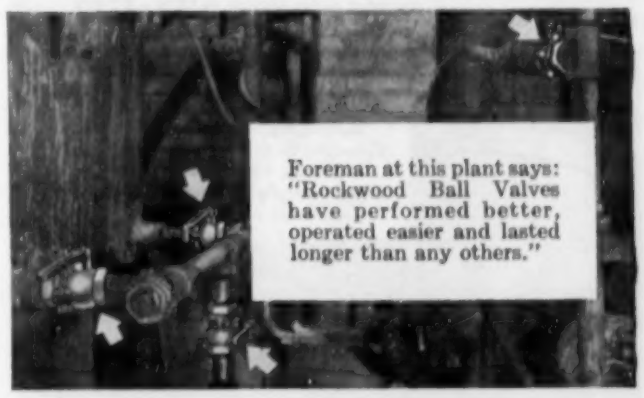
Inland Model "D" Wire Tying Machine

Ask for complete information on this new efficient package tying combination. Just refer to Model "D" and Wire.

There's no package tying combination more efficient and handy than the Model "D" self-tensioning tying machine and the new 25 lb. packaged, smooth-feeding Inland tying wire. Tying of cartons, light wooden cases, parcel post packages and other medium sized bundles is put on a production line basis. Inland round tying wire is available galvanized—and in 17, 17½ and 18 gauges. Inland wire tying conforms to all U. S. postal regulations.

INLAND WIRE PRODUCTS COMPANY
3963 South Lowe Avenue Chicago 9, Illinois

If you write maker identify as IEN-2766



Do you need a FULL-FLOW VALVE?

FULL-ROUND-FLOW in ceramics plants, where Rockwood Ball Valves, handling clay-and-water mixtures, protect product quality by preventing air bubbles caused by turbulence in conventional valves. What are *your* applications?

Other features — positive leakproof seating; quick opening and closing and extra wear-resistance. Tested and listed by Underwriters' Laboratories, Inc. Write for complete details. Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

ROCKWOOD

ROCKWOOD FULL-FLOW BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN-2767

conform to J. I. C. standards

RUGGED . . .

Where it counts most!

CARTRIDGE . . . metallic rod-wiper, packing, bushing in one unit.

RUGGED BODY . . . all steel end caps and barrel.

PISTON RINGS . . . step-cut joint, long life, minimum leakage.

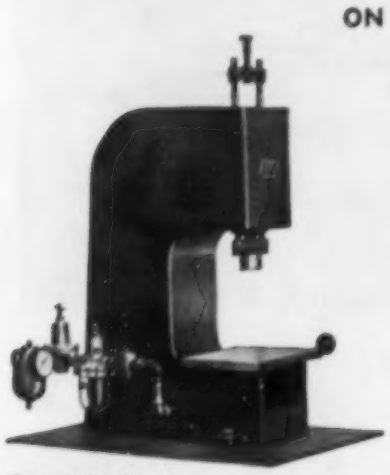
PRESSURE . . . 2,000 psi heavy-duty . . . 3,000 psi non-shock.

SIMPLICITY . . . no tie-rods . . . no retainer rings.

hydro-line *Manufacturing Co.*
5610 PIKE ROAD • ROCKFORD, ILLINOIS

If you write maker identify as **IEN - 2768**

6 WAYS TO CUT "PER-PIECE" COST ON PUNCH PRESS WORK



1. INCREASED OUTPUT — up to 120 strokes per minute.
2. GREATER ACCURACY — pre-select ram pressure — pre-select ram stroke — for close tolerances.
3. PRE-SET RAM MOVEMENT — from slow squeezing action to fast punch press blows.
4. LOW OPERATING COST — Single acting air cylinder uses little air; low oil consumption.
5. WIDE WORK RANGE — Models ¾ to 10 tons pressure — up to 4" stroke.
6. CUTS OPERATOR FATIGUE — simple — Easy — Safe — Practical. Little physical effort. Either hand or foot operated.

Studebaker AIR-HYDRAULIC Gap Type Presses

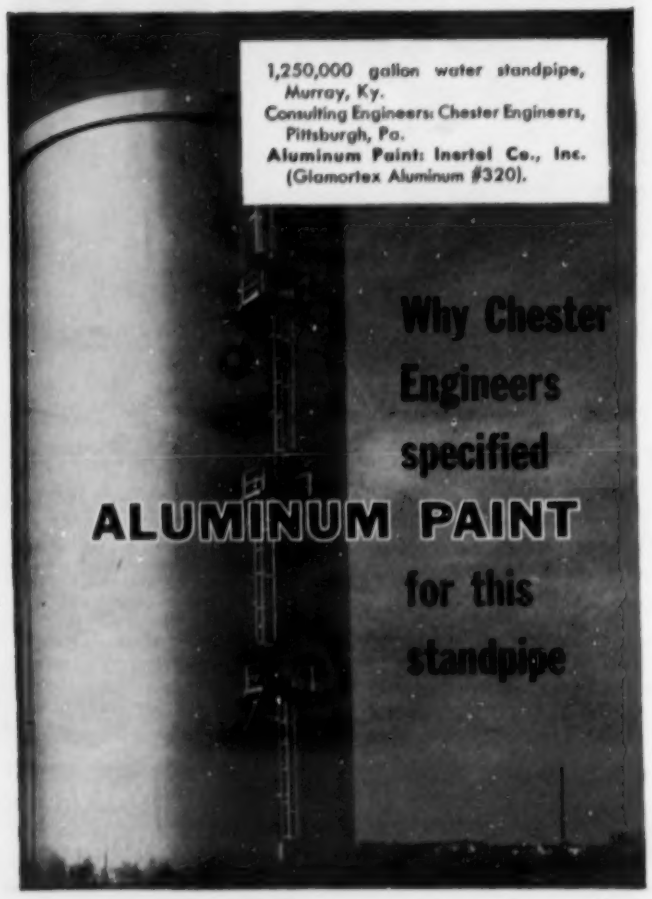
All steel welded for longest life on stamping, riveting, assembling, forming, punching, cutting — all punch press jobs.

SEND FOR BULLETIN

Studebaker MACHINE COMPANY

1235 South 9th Avenue — Maywood, Illinois

If you write maker identify as **IEN - 2769**



The Chester Engineers *specified* aluminum paint because they wanted a bright, durable, mar-resistant finish on all exterior surfaces and a paint that retains its high gloss. Only aluminum paint met these rigid requirements of durability and attractiveness.

Aluminum paint is first choice for protection and beauty throughout industry. It resists rust and corrosive smoke and fumes. It reflects up to 75% of heat and light rays, keeping buildings cooler in hot weather, brightening interiors of plants and warehouses.

We do not make paint, but Alcoa Aluminum Pigments are found in all of the best brands. If you're looking for top-notch protection for metal, masonry or wood, take a tip from the engineers. Specify aluminum paint. Write us today for full information.

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

Paint Service Bureau, Aluminum Company of America
1787-C Alcoa Building, Pittsburgh 19, Pa.

Please send me your FREE BOOKLET, *Painting with Aluminum*. I plan to paint_____

Name_____

Company_____

Address_____

City_____ Zone____ State_____

If you write maker identify as **IEN - 2771**

HONING . . Tools and stones designed for specific work application

Source: BARNES DRILL CO.
856 Chestnut St., Dept. IEN, Rockford, Ill.

Bulletin 500

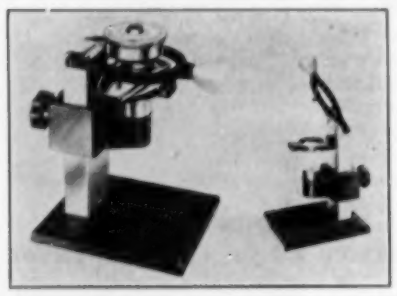
Illustrated are three types of honing tools and the stones with which they apply. The first is a conventional stone and shell assembly for applications involving a range of bore diameters. The stone is clamped in a metal holder. The second of the three designs employs body support for the stone at the cutting face and provision in the tool for actuation of the abrasive to obtain long stone life. The stones and holder assemblies are held in position by spring tension. The stones are quickly inserted or replaced in the holder by means of a clamp lock.

Type C, the third of the three new designs, holds the stones in position by controlled friction for quick insert and removal. Body support is provided for the stone at the cutting face. Provision is made in the tool to actuate the abrasive for long stone life as in the Type B. This holder and its stones are suited best for specific applications in small diameter work.

If you write maker identify as **IEN - 2772**

TESTING . . Bench adapter to mount portable hardness tester

Source: NEWAGE INTERNATIONAL INC.
235 E. 42nd St., Dept. IEN, New York 17, N. Y.



To mount on a table

Work pieces, to be tested for hardness, are positioned on a bracket mounted anvil that is adjustably assembled on the vertical column in this new adapter. The hardness testing instrument itself previously described IEN-1796-53, rests upon a second bracket through which the anvil projects to the work. Pressure is applied by bringing a hand operated lever, pivoted at the top of the column, down upon the gage skirt to establish indentation pressure. The operator can obtain a direct reading of hardness on the tester dial when the operating lever reaches its lowest point of movement.

The tester is individually calibrated to Rockwell A, B, C or 15N ranges and also to Brinell medium or low ranges. Reading can be obtained on sheet metal as thin as 0.02 in. and on round bar stocks larger than $\frac{3}{16}$ in. in diameter. The gage can be removed from the adaptor and applied as a separate portable unit. List price for the gage alone is $235. The adaptor and one anvil add $49.50.

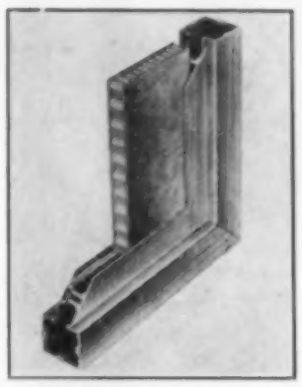
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2773**

If you write maker identify as **IEN - 2774**

BUILDINGS . . Aluminum partition, panel construction, movable design

Source: REYNOLDS METALS CO.
2500 S. Third St., Dept. IEN, Louisville 1, Ky.



Concealed fastenings

Aluminum faced honey comb core panels assemble in extruded aluminum structural members to make this new movable partition. The panels are 1¼ in. in thickness and consist of two outer sheets of embossed aluminum bonded to a core made of resin impregnated kraft paper. Channels are provided for neoprene glazing where glass or glazed railings are required. Provision is made for concealed wiring, switches, outlet boxes. The extruded members can be adapted to conform to the usual floor, wall and ceiling irregularities in a building.

If you write maker identify as **IEN - 2775**

PAINTING . . Clear lacquer to protect surface of natural wood

Source: AETNA PLYWOOD & VENEER CO.
1724 N. Elston Ave., Dept. IEN, Chicago 22, Ill.

Packaged in pints, quarts and gallons

Shield is a new clear lacquer for brush or spray application to finish plywood, solid wood, furniture, floors. It is particularly suited for light woods. It accents the grain pattern, brightens the wood color. It protects against moisture penetration. It will not yellow with age or darken the wood and can be used without a sealer.

One coat produces a good finish. Two coats leave a satiny surface. Three coats result in a gloss surface. The lacquer dries dust free in 30 minutes. A second coat can be applied in 3 to 4 hours.

If you write maker identify as **IEN - 2776**

TESTING . . Environment chamber, to minus 300 deg. F., employs dry ice

Source: MANTEC INCORPORATED
315 E. Franklin St., Dept. IEN, El Segundo, Calif.

Details on request

Dual control thermostats are employed with dry ice as the refrigerant, in this new environment chamber, to test mechanism components in a range between minus 100 and minus 300 deg. F. The chamber is lined with stainless steel. It encloses 5½ in. of glass wool insulation between it and the exterior steel housing. A motor-driven fan circulates air within the 12 cu. ft. unit. The hinged lid is balanced. List price is $725.

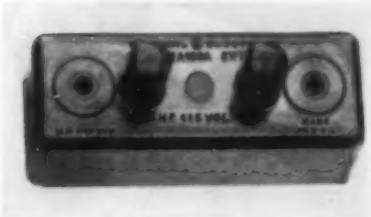
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2777**

If you write maker identify as **IEN - 2778**

MOTOR CONTROL . . Manual switch to start and to protect small motors

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



For appliances

New switch, for use on equipment such as washing machines, clothes dryers, lawn mowers, is a totally enclosed assembly of a start-stop mechanism and a manual reset overload. The latter protects the motor in both starting and running by means of a nichrome heater and a nickel alloy bimetal strip in the tripping mechanism. Depressing the start button will not re-energize the motor until the overload condition is removed and the strip returns to normal position. The switch measures about 2⅞ in. in length by 1 in. in width by 1¼ in. in height. Two mounting holes take No. 6 screws.

If you write maker identify as **IEN - 2779**

HEATING . . Hot water equipment, circulators, controls, fittings, valves

Source: C. A. DUNHAM COMPANY
400 W. Madison St., Dept. IEN, Chicago 6, Ill.

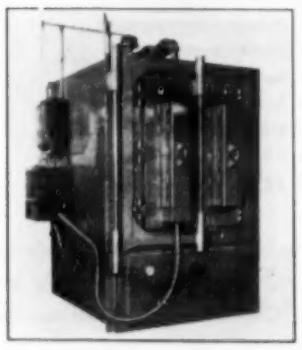
Complete data upon request

Motor driven circulators, pressure relief valves, float and expansion type air vents, air separators, circulator valves, pressure reducers, flow diverter fittings, balancing elbows and fittings, flow control valves, distributor heads and automatic indoor-outdoor Vari-Flow controls are now available in a complete line of hot water space heating equipment. The company has added it to supplement its line of steam heating equipment to provide all of the elements needed for both steam and hot water heating. The line includes radiators, unit heaters, pumps and specialties under the Vari-Vac, Metro and Fin-Vector trade names.

If you write maker identify as **IEN - 2780**

HEATING . . Electric furnace for application of heat and vacuum

Source: K. H. HUPPERT COMPANY
6830 Cottage Grove Ave., Dept. IEN, Chicago 37, Ill.



Built to order

Grinding wheels are "burned" to make their structure hard and dense in this new electric furnace. The equipment provides temperature to 2,300 deg. F. and combines it with vacuum to 29 in. in a chamber measuring 27 by 38 by 37 inches. Kanthal electric rod elements are employed. The vacuum equipment is enclosed in the base.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2782**

HOIST . . Drum type electric rates 2 ton, maximum lift to 25 feet

Source: ROBBINS & MYERS INC.
1345 Lagonda Ave., Dept. IEN, Springfield 99, Ohio

Aluminum frame

Type J-3 designates a new drum type hoist in the company's line, previously described IEN-7455-49. The new assembly employs a totally enclosed 2-hp. ball bearing motor designed particularly for hoist duty. The load is handled with two parts of ⅜ in. 6 by 37 wire rope. Standard lift is to 18 ft. without overwind and to 25 ft. with overwind. Upper and lower limit switches prevent overtravel in either direction.

The hoist action is controlled by a magnetic disc type motor brake that engages when the motor circuit is opened and releases when the circuit is closed. This brake stops the hook quickly without drift for accurate load spotting. A Weston type load brake supplements the magnetic brake. It operates in an oil bath and employs a non-reversing clutch.

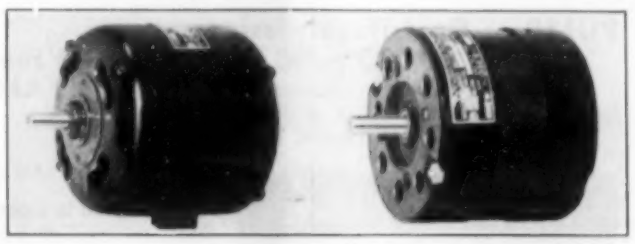
The transmission includes three reductions of spur gears made of heat treated alloy steel. The gears are mounted on high carbon or alloy steel shafts with ground finish. All of the gears are splash lubricated inside an oil-tight gear housing.

The rope drum is made of cast iron with shrouded flanges to prevent the rope from over-riding. The hoist is available with a plain, hand geared or motor driven trolley. It is controlled by single or two-speed push buttons and contactor.

If you write maker identify as **IEN - 2783**

MOTORS . . Shaded pole design, 0.01 to 0.03 ratings at 1,500 rpm.

Source: HOWARD INDUSTRIES
Dept. IEN, Racine, Wis.



For fans, recorders, business machines

Model 2800-D, with assembly in a die cast housing, and Model 2800-S, with two formed steel end housings over the stator, are new designs in the company's line of shaded pole motors for operation on 110-volt ac. Model 2800-D is available with sleeve or grease sealed ball bearings. It measures 3¾ in. in diameter by 5¼ in. in housing length.

Model 2800-S measures about 3¼ in. in diameter by about 2⅛ to 3⅛ in. in length, depending upon the stacking height. This motor rides on self-aligning sleeve type bearings made of porous bronze to operate in connection with oil reservoirs.

Stator and rotor laminations are made of silicon steel. The field coils are wound with Formvar wire, dipped and baked in insulating varnish. Any of ten geared heads can be supplied with Model 2800-D.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2785**

16" PRECISION DRILLING MACHINE

- Variable speed spindle drive, 600-4000 RPM without shifting belts
- Back gears for reaming, etc., 150-1000 RPM
- Clamp type depth stop for rapid adjustment
- Screw type vernier for fine depth adjustment
- Spindle runout at 2 inch extension from socket .001", from chuck .0025"
- Work light
- Table square to spindle .005" at 6" radius
- Rigid 3½" diameter column

600 to 4000 RPM Model, $290 f.o.b. Milwaukee, Wis., complete with motor, work light and cord.

THE ELECTRO-MECHANO CO.
269 E. ERIE STREET MILWAUKEE, WIS.

If you write maker identify as **IEN - 2786**

YOU'RE SAFE WITH THE

NEW SUPER-TOUGH

WILLSON SAFETY HAT

THE NEW WILLSON SAFETY HAT is entirely new in design, material and method of manufacture . . . tough as metal and more resilient! Here are some other outstanding features of the new Willson Super-Tough* Safety Hat:

Streamlined Contour—deflects objects more effectively and provides a greater safety "pocket" inside.

New Suspension Design—adjustable "hammock" headband is suspended *inside* at 6 points. No exposed rivets or lacing—no holes through hat.

Comfortably Cool—space between headband and shell provides ample air circulation for wearer.

Five Colors—green, red, yellow, brown or white . . . to provide job or company identification.

Passes all required tests with an extra margin of safety!

More than 300 safety products carry this famous trademark

WILLSON

Established 1870

Write for your copy of the new bulletin describing the Willson Super-Tough* Safety Hat.

*trademark

WILLSON PRODUCTS, INC., 217 Washington Street, READING, PENNA.

If you write maker identify as **IEN - 2781**

Here are SOME of the advantages of **Variac** *Motor Speed Controls*

for D-C Shunt, Compound or Series Motors from A-C Lines

- ★ No electronic tubes—*no warm-up required—ready for instant use*
- ★ Extremely fast START — STOP — REVERSE
- ★ Very smooth control — *speed range 15:1; up to 100:1 with light or smooth loads*
- ★ Dynamic braking in larger models
- ★ High starting torque
- ★ No torque pulsations at low speeds
- ★ Simple to install
- ★ Very little maintenance
- ★ 9 models from 1/15th hp or less to 1½ hp

- ★ Low cost: Prices start at $75.00

Write for the VARIAC Motor Control Bulletin

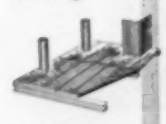
GENERAL RADIO Company
275 Massachusetts Avenue, Cambridge 39, Massachusetts, U.S.A.
NEW YORK 6 · CHICAGO 5 · LOS ANGELES 38

If you write maker identify as **IEN - 2784**

USE THIS NEW SAFETY MATERIAL ALL OVER YOUR PLANT

Work platforms

Flooring



Gutter covers

Partitions

Safety **GRIP-STRUT** Pat. Pending

NON-SKID—RUGGED—LOW COST

Safety Grip-Strut is a new basic material. All one piece, steel or aluminum, in various sizes and gauges. Sold like lumber, used like lumber and stocked in your storeroom like lumber. Ideal for on-the-job fabricating. Not welded, riveted or expanded. It presents an open space, in a diamond shaped pattern, in excess of 75% of the area for ready access of light and air and gives a positive NON-SKID footing in all directions. Ideal for stair treads, fire escapes, cable trays, work platforms, catwalks, flooring and for original equipment safety treads. Your own mechanics can install it—it's inexpensive, yet permanent and safe.

Write today for new catalog showing loadings and methods of easy application in your plant.

Distributors in all principal cities.

GRIP-STRUT division
THE GLOBE COMPANY
Manufacturers since 1914
4010 S. Princeton Avenue • Chicago 9, Ill.

If you write maker identify as **IEN - 2787**

OSTER presents the new 75 lb. "Featherweight Champ"

The all new Oster "Featherweight Champ", a Power Drive for Hand Pipe Tools, has just weighed in at 75 lbs. One man can move it and use it with ease . . . yet the "Featherweight Champ" is exceptionally sturdy and powerful. Ideal for "on the spot" threading, its range is ⅛" to 2", and it is available with either electric or gasoline power.

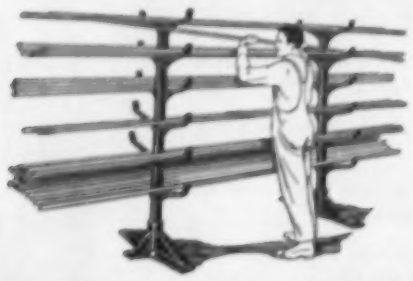
For the full story on the "Featherweight Champ" see your local Oster Distributor.

THE OSTER MANUFACTURING CO.
Main Office and Factory:
2053 East 61st St. • Cleveland 3, Ohio

Builders of Cost Reducing Threading Equipment Since 1893

If you write maker identify as IEN - 2788

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN - 2789

VULCAN

In addition to Electric Heating Units and Electric Soldering Tools Vulcan makes these

ELECTRIC HEATING DEVICES

VULCAN ELECTRIC CO
DANVERS VULCAN MASS

If you write maker identify as IEN - 2790

SHAFT-MOUNTED SPEED REDUCER
Easy to install as a standard pulley!

This time-tested idea in speed reducers cuts installation and operating costs. The Shaft-King mounts directly on the shaft of the driven machine, runs on any power source, requires no foundations or supports, no engineering to install, remove or relocate. Made in 13:1 and 20:1 ratios for horizontal and vertical mounting. With American Wedgbelt Drives it covers a range of speeds from 154 RPM down, and power requirements through 40 HP.

Write today for the Shaft-King Catalog. Shaft-King companion products: Backstops; Overload Releases; Wedgbelt Econ-O-Matic Drives.

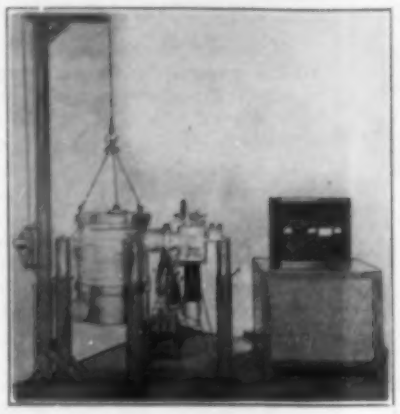
The American Pulley Company
4240 Wissahickon Ave., Phila. 29, Pa.
Gentlemen: Please send me:
☐ Shaft-King Catalog ☐ Information on:
No obligation of course.
Name
Title
Address
City Zone State

At the profit end of the machine
Power Transmission by
AMERICAN PULLEY COMPANY

If you write maker identify as IEN - 2791

TESTING . . Vacuum furnace for laboratory use, to 2,000 deg. C.

Source: OPTICAL FILM ENGINEERING CO.
2736 N. 6th St., Dept. IEN, Philadelphia 33, Pa.



Built to your order

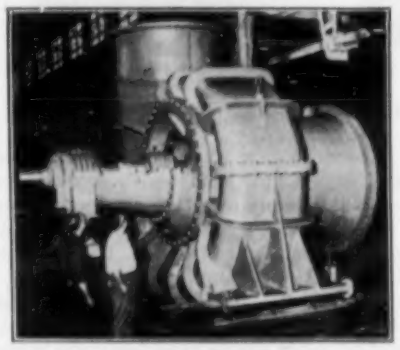
Vacuum melting, alloying, casting, heat treating, quenching, induction or resistance heating, can be accomplished with this new Type F-9 universal laboratory furnace. Various heater and crucible assemblies can be supplied. The unit will handle 5 lb. of steel and equal volume of most other metals. It is served by a Kinney VSM-556 roughing pump and by a No. 400 OFEC oil diffusion pump. The furnace valves and diffusion pump are supported on four telescoping posts in connection with a demountable hoist mechanism so the furnace can be raised and lowered through a 2 ft. range.

The main body consists of a vertical stainless steel cylinder 18 in. in diameter with flanges on both ends. The cylinder is wrapped with a copper cooling coil and is fitted with a 6-in. pumping port and an 8-in. port for heating element leads. Connected to the pumping port is a 4-in. right angle OFEC poppet valve baffle and below this baffle is the oil diffusion pump. A flanged stainless steel cylinder, 9 in. in height by 16 in. in inside diameter, is closed at the bottom and bolted to the bottom of the main body to contain molds, splash shields and similar equipment. The mold can be water cooled and resistance heated for controlled solidification. This cylinder is replaced with a flat valve and oil reservoir, located directly below the heater, for heat treating and quenching operations. Control equipment and a separate power unit complete the assembly.

If you write maker identify as IEN - 2792

PUMP . . Centrifugal design rates 90,000 gpm. on head to 44 feet

Source: MORRIS MACHINE WORKS
Dept. IEN, Baldwinsville, N. Y.



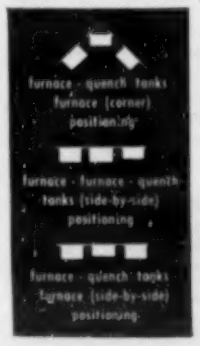
For reservoir supply

Illustrated is a new 60-in. mixed flow centrifugal pump that stands 14 ft. in height and has a capacity rating equivalent to about 130,000,000 gal. of water per 24-hr. day. The pump delivers by means of centrifugal force combined with lift of the rotor vanes on the water. The single inlet permits flow to enter axially. Discharge is in both an axial and radial direction into a volute type housing. Drive is by a 1,250-hp. motor. The shaft rides on Rollway Type MUC-5248 double width radial bearings.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2793

Do it with a Waltz small tool Furnace!



Compact units fill very little space, can easily be positioned to fit your floor plan (see diagram at left). Furnace sections equipped with casters.

Includes a pre-heat furnace, a high heat furnace, and quench tanks. Temperature range permits treatment of all high speed steels including cobalt.

Waltz small tool furnaces are "money makers" in hundreds of shops throughout the country.

A complete line of Waltz standard or special heat-treating furnaces, using all types of fuels, are built to suit your requirements. Write Dept. A for comprehensive bulletin.

Waltz furnace company
SYMMES STREET
CINCINNATI, OHIO

If you write maker identify as IEN - 2794

FREE...

FOR... DESIGNERS
METHODS ENGINEERS
PROCESS ENGINEERS
PRODUCT ENGINEERS
MECHANICAL ENGINEERS
RESEARCH ENGINEERS
SUPERINTENDENTS
PURCHASING AGENTS

SEND FOR THESE HELPFUL BULLETINS TODAY

SERVICES BULLETIN NO. 161 describes the facilities that make Federal a *one-stop* stamping service. Specifications cover special die stamped wrenches, nameplates, and quality short run stampings from any stampable material.

COSTS BULLETIN NO. 101 shows how Federal's special dies give the accuracy, exact duplication, and tolerances of permanent dies *plus* saving as much as 80% on die costs.

Federal TOOL AND MANUFACTURING CO.
3612 ALABAMA AVE. (ST. LOUIS PARK)
MINNEAPOLIS, MINNESOTA
"QUALITY STAMPINGS IN SMALL QUANTITIES"

If you write maker identify as IEN - 2795

MULTI-PURPOSE LOOMIS 20 Ton Hydraulic Press

Quickly adjusted vertical opening, by hand wheel, permits many different set-ups in minimum time.

Compression and transfer molding; forming; laminating; extruding; testing; metal working; tool room service; etc.

- Accurate operation
- Guided moving platen
- Sturdy construction
- Self-contained
- Bench mounted
- Hand operated
- 9" x 9" platen area
- 22" vertical opening

ACCESSORIES: Platens, electric, steam or water and combination. Temperature controls. Adjustable multiple opening. Auxiliary low pressure gauges. Fast air closing. Ceramic porosity testing, etc.

Other capacities and sizes available. Write for Bulletin.

LOOMIS ENGINEERING & MFG. COMPANY
125 SOUTH 14th STREET, NEWARK 7, NEW JERSEY

If you write maker identify as IEN - 2796

PYRO SIMPLIFIED OPTICAL PYROMETER

Any operator can quickly determine temperatures on minute spots, fast-moving objects and smallest streams. Completely self-contained. No calibration charts or accessories needed. An accurate, direct reading Pyrometer that pays for itself by helping prevent spoilage. Weighs 3 lbs. Available in 5 temperature ranges (1400°F. to 7500°F.) Ask for free Catalog No. 85.

PYRO SURFACE PYROMETER

Designed to meet all plant and laboratory surface and sub-surface temperature measurements with selection of thermocouples and extension arms. The IMPROVED PYRO is quick acting, accurate, light-weight and rugged. It features large 4½" direct reading scale, automatic cold end junction compensator and shielded steel housing—all combined to offer highest precision, accuracy and dependability. Available in five standard ranges from 0-300° to 0-1200° F.

Ask for FREE Catalog #168

THE PYROMETER INSTRUMENT CO.
BERGENFIELD 21, NEW JERSEY
New Plant and Laboratory
Manufacturers of Pyro Optical, Radiation, Immersion and Surface Pyrometers for over 25 years

If you write maker identify as IEN - 2797

HOW TO PROTECT VULNERABLE SURFACES AGAINST CORROSION

Wherever you have a corrosion problem, you will find this guide helpful in working out an economical and practical solution. Based on the experience and research of TAPECOAT engineers since 1941, this factual booklet shows where and how TAPECOAT coal tar coating in handy tape form can be used to overcome corrosive action—both underground and above ground. It presents proved methods of protecting pipe, pipe joints, fittings, couplings, tanks and other vulnerable surfaces, together with case histories demonstrating the ability of TAPECOAT to meet the most severe conditions.

Write for your copy of this helpful guide today.

The TAPECOAT COMPANY
Originators of Coal Tar Tape Protection
1553 Lyons Street
Evanston, Illinois

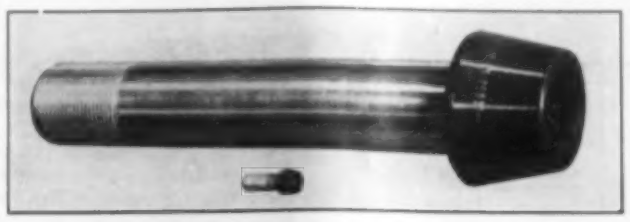
If you write maker identify as IEN - 2798

MERRILL BROTHERS
56-14 ARNOLD AVENUE
MASPETH, N. Y.

If you write maker identify as IEN - 2800

FASTENING . . Precision bolt for aircraft, ¼ to 1½ in. sizes

Source: STANDARD PRESSED STEEL CO.
Box 732, Dept. IEN, Jenkintown, Pa.



Tensile strength to 180,000 lb. per square inch

Five sizes, from 1 to 1½ in., have been added to the company's line of Military Standard internal wrenching bolts for aircraft. The line now includes 14 sizes starting at ¼ inch. All are made of aircraft alloy steel. The fillet area under the head is cold worked. The threads are rolled after heat treatment. Finish is by cadmium plating.

If you write maker identify as IEN - 2801

CLEANING . . Phosphoric compounds to clean and deposit iron phosphate

Source: DETREX CORPORATION
14329 Woodrow Wilson, Dept. IEN, Detroit 32, Mich.

For ferrous metal products

Series 800 designates a new line of cleaning compounds available for specified applications, upon the recommendation of one of the company's field service engineers. Application can be made by brushing, sponging, dripping or flowing on. The cleaners remove corrosion, light scale, shop dirt, oil.

They deposit a fine-grained crystalline structure of iron phosphate that chemically interlocks with the metal being cleaned. This structure contains microscopic crevices in which paint flows so peeling and flaking in service are retarded, corrosion is prevented and blistering, due to corrosive action taking place under the paint film, is practically eliminated.

If you write maker identify as IEN - 2802

MARKING . . Self-adhesive labels strip easily from card for application

Source: W. H. BRADY COMPANY
727 W. Glendale Ave., Dept. IEN, Milwaukee 12, Wis.

Available from stock

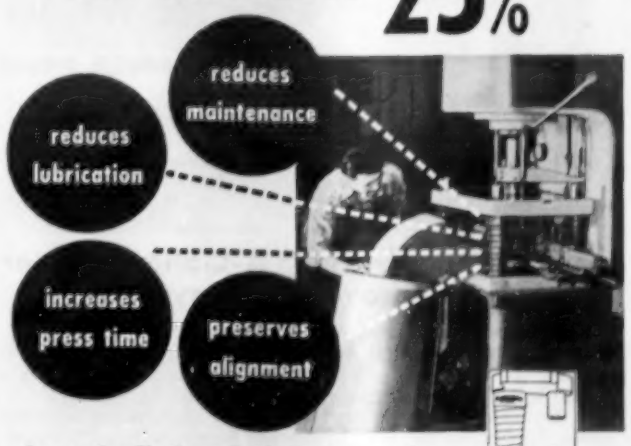
The company announces the first of a new line of point-of-action self-adhesive sign labels for application at locations where the specific action is required. Each unit is self-adhesive and is applied without moistening after it has been stripped from the card. It measures 2¼ by 1 inch. Nine units are mounted on each card. Black letters appear on a bright yellow background.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2803

ELASTICONE® GUIDE PIN COVERS

CUT DIE COSTS 25%



Low-costing Elasticone Guide Pin Covers reduce die breakage; protect man & machine — closes the gap between pins and bushings.
Just snaps into place—no installation costs. Manufactured in stock sizes.

Write for full information and literature.

CENTRAL
2204 EAST HUNTINGDON ST.
PHILA. 25, PA.

CENTRAL SAFETY EQUIPMENT COMPANY

If you write maker identify as IEN - 2804

KODAK SIGNET 35 CAMERA—the ideal 35mm. camera for most photographic needs.

Easy-to-use camera for hard-working pictures

You'll find it easier to train . . . to demonstrate . . . to illustrate technical talks . . . and do countless other important jobs with 35mm. slides and prints. Job setups, breakage claims, safety hazards, research results, maintenance data—all can be photographed for study, circulation, and reference. And with a camera small enough to slip into your pocket for use as you walk through the plant.

The Kodak Signet 35 Camera has all the advanced features you need for taking quality industrial photographs. Yet it's as compact and easy to operate as your family snapshot camera. A coupled rangefinder takes the guesswork out of focusing—three simple settings with handy finger-tip controls make accurate operation a snap. Sensibly priced at $92.50, including Fed. Tax.*

WRITE FOR FREE BOOKLET on Kodak Signet 35 Camera.

EASTMAN KODAK COMPANY
Rochester 4, N. Y.

** Price quoted is subject to change without notice.*

If you write maker identify as IEN - 2805

Which truck is best for your needs?

YALE MAKES THEM ALL!

. . . and there's a YALE Truck with the capacity you need from 1,000 to 100,000 lbs.

YALE has a Truck with fuel, capacity, and interchangeable attachments . . . exactly suited to your particular handling needs. And, every YALE Truck is quality built . . . designed to save time, space, manpower. . . slash handling costs in half and then in half again.

Any YALE Truck you need can now be acquired under a flexible "3-Way-Finance-Plan". Ask your YALE representative for details. Or mail the coupon.

YALE*

INDUSTRIAL TRUCKS AND HOISTS
*Reg. U.S. Pat. Off.

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 363
Roosevelt Boulevard, Philadelphia 15, Penna.

☐ Please send me the Picture Story of Yale Materials Handling.
☐ Please have your representative call.

Company _____
Name _____ Title _____
Street _____ City _____ State _____
In Canada write: The Yale & Towne Manufacturing Company St. Catharines, Ontario, Canada

Gas, Electric, Diesel & LP-Gas Industrial Trucks
Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts

If you write maker identify as IEN - 2807

Write for **BULLETIN 8992**

Address Square D Company
4041 North Richards Street
Milwaukee 12, Wisconsin

SQUARE D COMPANY

If you write maker identify as IEN - 2808

HANSEN

TWO-WAY SHUT-OFF COUPLING

Shuts Off Both Sides of Line

Series HK

Both ends of line are positively sealed when you disconnect a Hansen Two-Way Shut-Off Coupling. No tools required. Identical valves in Socket and Plug permit free flow of gas or liquid when Coupling is connected —practically eliminate spilling of liquid or escape of gas when disconnecting Coupling. Does not depend upon line pressure to seal. Sizes ⅛" to 1". Female pipe thread connections.

To connect, merely pull back sleeve, push Plug into Socket.

To disconnect, pull back sleeve. This unlocks Coupling — immediately and automatically seals both ends of line.

Also Straight-Through and One-Way Shut-Off Couplings. Write for catalog.

THE HANSEN MANUFACTURING COMPANY
5021 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 2809

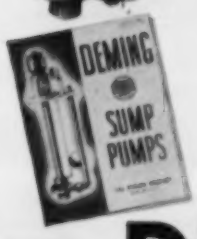
SUMP SERVICE

Deming Vertical Sump Pumps meet a wide range of needs.

HEAVY DUTY: Sizes 1 to 10 inch discharge. Capacities up to 3000 G.P.M. Heads to 140 ft.

MEDIUM DUTY: Sizes 1½ and 2 inch discharge. Capacities up to 160 G.P.M. Heads to 60 feet.

LIGHT DUTY: Size 1½ inch discharge. Capacity up to 80 G.P.M. Heads to 30 feet.



Send for Bulletin 4600A

All types of Deming Sump Pumps are illustrated and explained. Contents include selection tables, accessories, etc.

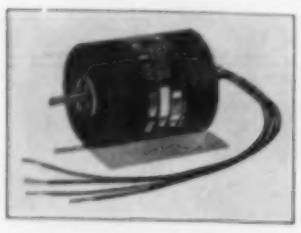
THE DEMING COMPANY
521 BROADWAY • SALEM, OHIO

DEMING
SUMP-PUMPS

If you write maker identify as IEN - 2810

CONTROL . . Servo motor for use in 60 and 400 cycle circuits

Source: G-M LABORATORIES INC.
4300 N. Knox Ave., Dept. IEN, Chicago 41, Ill.



Precision assembly

Type 52 is a new precision servo motor measuring about 1½ in. in diameter and length. It is available in a variety of speeds and electrical characteristics and can be supplied to meet military specifications with reference to humidity, temperature, vibration and altitude.

The stator is embedded in an insulating compound of high dielectric strength and high temperature stability. Stainless steel or aluminum can be specified in the housing. The ball bearings can be made of stainless steel or SAE 52100 steel. The rotor is centrifugally cast. Laminations are nickel steel.

If you write maker identify as IEN - 2811

SEPARATING . . Oil recovery unit for washing machines, coolant sumps

Source: DETROIT HARVESTER CO.
2750 Guardian Bldg., Dept. IEN, Detroit 26, Mich.

Built by Pioneer Pump Division

Kleer-Stream trade names a new electrically operated and controlled oil separator. It recovers oil from solutions employed in washing machines and returns the reusable solution to the machine after the oil has been removed. At the same time, it stores the recovered oil in a reservoir in the top of the rectangular housing from which it can be withdrawn into drums.

The operation is automatic under control of a float and solenoid valve. Inlet is into a central compartment for discharge into a V-shaped baffle or trough. Overall dimensions are 40½ by 12¾ by 61¼ inches.

If you write maker identify as IEN - 2812

WRENCH . . Aluminum pipe tool carries replaceable alloy steel jaws

Source: INTERNATIONAL FORGE CO.
2310 S. Kedzie Ave., Dept. IEN, Chicago 23, Ill.

Bulletin Lite-Mite

Aluminum forgings are employed in the handle and in the movable head of this new Lite-Mite pipe wrench. The adjusting nut is made of forged steel and the two replaceable jaws are heat treated alloy steel. The head carries size markings to assist in positioning it for a given size of pipe.

Five sizes in the line are 10 to 36 in. for pipe from ⅛ to 4½ inches. Weight is from a little under 1 lb. to 8 pounds. This compares with 1¾ to 20 lb. for a steel wrench of similar design. The wrench is made to exceed physical requirements of Federal Specification GGG-12-651a.

List price is about $5 to $28. Replacement parts of the same quality and workmanship as those in the original wrench are available from stock.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2813

Now a Better Welder

AT A LOWER PRICE

Sureweld® A-C Shop Welder improved in many ways

The Sureweld A-C Shop Welder, for general utility welding, has always been outstanding for the remarkable arc stability it has provided, the desirable welding characteristics at all current levels and the operator's control of current value.

And now this welder has been greatly improved. The exclusive Sureweld 4-coil transformer has been positioned horizontally for even better ventilation and cool operation even with higher output. Primary insulation and secondary windings provide high dielectric strength for peak performance at high heats. Operator's convenience has been increased by side-mounting the control handle next to the high-visibility calibrated scale. Other advances markedly decrease KVA input and increase ease of operation, dependability and portability. Best of all, the improved design has resulted in lower prices.

Send for descriptive bulletin NH-101 today.

NCG NATIONAL CYLINDER GAS COMPANY
840 N. Michigan Avenue, Chicago 11, Ill.

If you write maker identify as IEN - 2814

Goodbye Elbow Grease!

Use **HAND-I-HACK*** **Portable**

POWER HACK SAW

TAKE IT EASY—let electricity do your muscle work! Hand-I-Hack eliminates the sweat and fatigue of hack sawing. Plugs into any wall or light socket. Truly portable — can be carried anywhere with one hand. Has swivel vise — operates in any position: horizontally, vertically, at an angle, even upside down. Maximum capacity: 3" x 3" square cut. Uses lower cost standard 10" hand blades — will cut solid bar stock and thin wall tubing, pipe, conduit, cable, rolled forms, etc.

Cutting small diameter brass tubing, using wood block false jaws.

Making a square cut on solid 3" steel bar.

• ***Write for catalog and name of dealer***

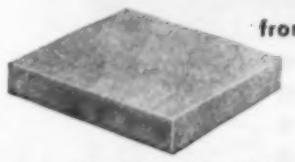
*I.M. Reg. U.S. Pat. Off.

Lipe-ROLLWAY CORPORATION
Manufacturers of Automotive Clutches and Machine Tools
812 Emerson Ave., Syracuse 1, N. Y.

If you write maker identify as IEN - 2815

Armstrong's

VIBRACORK CUSHIONS VIBRATION



from Hydraulic Presses, Pumps, Compressors, and many other types of Machinery and Equipment

. . . *ACTUALLY FLOATS THE LOAD ON MILLIONS OF AIR CELLS!*

Vibracork is a resilient machinery isolation cork plate made of pure cork granules, compressed and baked under pressure.

Convenient to stock — Standard sheets, 12" x 36"; Standard density 2" and 3" thick; Heavy density, 1", 2" and 3" thick.

Easy to use — Can be cut to size on the job with an ordinary hand saw.

Loading range — Standard density, 1500# to 4000# per. sq. ft.; Heavy density, 5700# to 8500# per. sq. ft.

Availability — Immediate delivery. Korfund is sole distributor for the United States.

For installation data and further information, ask for Bulletin VC-500.

THE KORFUND CO., INC.

KORFUND VIBRATION CONTROL — SPRINGS — RUBBER — CORK

48-35 E. Thirty-second Place • Long Island City 1, N. Y.

If you write maker identify as IEN - 2816

Here's TROUBLE-FREE FLOW CONTROL

. . . for corrosive services

HILLS-McCANNA diaphragm valves

Leak Proof
Non-Contaminating
Drip Tight
Working Parts Isolated from Flow
Non-Clogging
Non-Sticking

Hills-McCanna Valves are suitable for air, water, gases, volatile and viscous substances, semi-solids, etc. Handwheel or lever operated or choice of automatic or remote operators. Choice of 14 diaphragm materials; 49 body materials. Sizes ⅜" to 14". Write for catalog.

HILLS-McCANNA CO.
2347 W. Nelson Street • Chicago 18, Illinois

HILLS-McCANNA
saunders patent diaphragm valves
Also manufacturers of — Proportioning Pumps
Force-Feed Lubricators • Magnesium Alloy Castings

If you write maker identify as IEN - 2817

300 MILLION count life

Forty years at 18000 counts per hour 40 hours per week

MODERN COUNTING DEVICES

- Stroke and Revolution Counters
- Coil Winding Counters
- Electric Counters
- Automatic Batch Counters
- Actuating Switches

Catalog describes counters, LARGE and small, pre-determined, mechanical, electric, photo-electric, coil winding. Send for your copy.

That's normal life expectancy for PIC world famous Wizard Electric Counters on AC with built-in rectification, and on DC.

Power consumption under 5 watts permits actuation (without relay) in plate circuit of many electronic tubes.

Balanced armature avoids miscounts that result from vibration with other types of counters.

Furnished for most any voltage up to 220, AC or DC, in standard, panelmount, or dustproof enclosed models, with four or six number wheels.

See your PIC Representative or write.

PRODUCTION INSTRUMENT COMPANY
700-10 W. Jackson Blvd., Chicago 6, Ill.

If you write maker identify as IEN - 2818

CALCULAGRAPH

keep tabs on costs

-with ACCURATE job time records

CALCULAGRAPH

figures elapsed time accurately

Reliable job time records are essential for compiling correct cost data, estimating reorders and checking on production efficiency. One sure way to secure accurate to the minute, dependable time costs is to use Calculagraph automatically-figured elapsed time records. Calculagraph gives you total elapsed time, starting and finishing time and date on a permanent, printed reference card. Eliminate losses due to inaccurate job time calculations by using Calculagraph to time your operations.

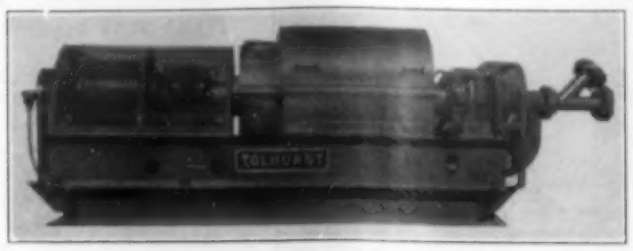
Write for full information today, to Dept. 300

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

If you write maker identify as IEN - 2820

PROCESSING . . Centrifugal machine, variable speed, continuous discharge

Source: AMERICAN MACHINE & METALS INC.
554 12th Ave., Dept. IEN, East Moline, Ill.



Section view in Bulletin TC-10-53

The company has developed a new double bowl continuous discharge machine in which centrifugal force can be varied to about 2,000 X. It offers the machine on 90-day test in plants now using continuous centrifugals or those that would like to investigate their application. The machine is known as the Maxi-Flex. Its hydraulic-mechanical combination drive, with hand wheel control, permits selection of the "beach" speed in a range to 300 in. per minute.

Several pool depths are available by adjustment of orifice plates. Self-cleaning feed chambers minimize down time when changing from one product to another. Two sizes are designated 18 by 28 in. and 24 by 38 inches.

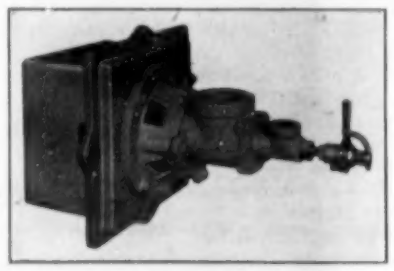
The inner bowl is mounted coaxially within the outer bowl on a duplex ball bearing and a roller bearing, both operating in sealed chambers with grease lubrication. The inner bowl is fabricated by welding and contains two separate feed chambers and a wash chamber with appropriate discharge openings. A spiral conveyor is welded on the outside of inner bowl.

The outer bowl is fabricated by welding. Main bearings support it as well as the entire rotating assembly. They are spherical roller design and are assembled in pillow blocks. They are lubricated by oil from an external source under pressure. The rotating assembly is surrounded by a fabricated plate housing with baffles to prevent intermixing of the discharge cake and effluent.

If you write maker identify as IEN - 2821

HEATING . . Gas-oil burner for forge furnaces, melting pots, kilns

Source: NORTH AMERICAN MFG. CO.
4455 E. 71st St., Dept. IEN, Cleveland 5, Ohio



Data Sheet DF-212-3

Series 212-5, with a 2½-in. air connection, has been added to the company's line of dual fuel burners for use on furnaces, pots, driers, kilns. The burner will handle heavy oil, light oil, gas, with either manual or automatic control. It employs low pressure air for oil atomization at 22 oz. for heavy oil and 14 oz. for distillate.

Capacity on gas, with combustion air at 16 oz. at the burner, is 925,000 btu. per hour. Capacity on oil is to 1,350,000 btu. per hr. with the additional air that is supplied for atomizing purposes. Turn down characteristics permit operation on atomizing air only without forming carbon.

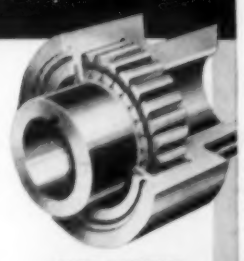
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2822

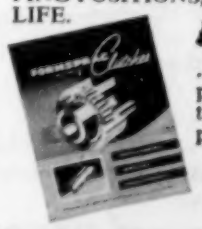
THE FULL COMPLEMENT SPRAG-TYPE CLUTCH

DESIGN ENGINEERS EVERYWHERE ARE SPECIFYING IT

Designers of equipment using over-running clutches are specifying Formsprag Clutches. Because: They've found out what a sprag is . . . What Full Complement means . . . Why that principle provides MAXIMUM TORQUE CAPACITY (for size and weight), INFINITE NUMBER OF GRIPPING POSITIONS, LONGER LIFE.



OVER-RUNNING
INDEXING (Feeding)
BACKSTOPPING



FOR YOUR FILES

. . . all the answers on the above plus engineering data, applications, etc. Write for this new 10-page illustrated brochure today.

FORMSPRAG COMPANY
23591 HOOVER ROAD
Van Dyke, Michigan

FULL COMPLEMENT **FORMSPRAG** *Clutches* DISTRIBUTORS IN PRINCIPAL CITIES

If you write maker identify as IEN - 2823

More WORK TIME and Less DOWN TIME with

ROCKFORD CLUTCHES

ROCKFORD CLUTCHES are factory, field and road tested to make sure they will stand up under the torque, shock load, engagement frequency and duration, slippage, reversal, etc., required by the machines in which they are to operate. Because of this exacting on-the-job application, down-time for clutch adjustments or repairs has been reduced to a minimum. Let ROCKFORD engineers help you get more work time from your machines.

ENGINEERING MAKES IT WORK... PRODUCTION MAKES IT AVAILABLE

Send for This Handy Bulletin

ROCKFORD CLUTCH DIVISION BORG-WARNER
303 Catherine Street, Rockford, Illinois, U. S. A.

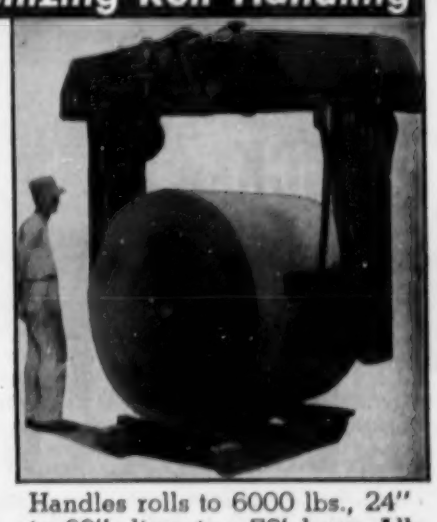
If you write maker identify as IEN - 2824

THIS 6000 LB. GRAB is Revolutionizing Roll Handling

KRAFT PAPER

NAPKIN TISSUE

SOUND-DEADENING FELT



Handles rolls to 6000 lbs., 24" to 60" diameter, 72' long. All motions motorized and controlled from crane cab. Turns rolls from vertical to horizontal. Handles various materials without damage.

WRITE FOR BOOKLET 2012 GIVES DETAILS

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4205 E. 285TH ST. WICKLIFFE, OHIO

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 2825

BACKED UP by GEARS FROM STOCK

Even when you specify such phenomenally long life gear sets as Cone-Drive double enveloping gearing, it helps to know that if you ever need replacements you can get them *—from stock!*

Make sure of that by specifying *STANDARD* Cone-Drive gear sets and reducers.

They will also give you these "plus" advantages:

- **Smaller center distances**
- **Up to 2/3 less weight**
- **More teeth in contact**
- **Lower overall cost**

STANDARD Cone-Drive gear sets come in ratios from 5/1 to 70/1; will handle loads from fractional to over 800 hp. Write for specifications.

CONE-DRIVE GEARS *Division, Michigan Tool Company*
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
7171 E. McNichols Road • Detroit 12, Michigan

If you write maker identify as IEN-2826

Save the cost of bearing failures with

McGILL MULTIROL® SE SERIES BEARINGS

Millions of Multirol SE Series full type roller bearings are being used to carry heavier loads longer where precision machinery requires maximum bearing capacity in limited radial space. Your bearing applications can be improved with such Multirol design advantages as solid roller retaining end shoulders, simplified lubrication, with built in lubrication reservoirs.

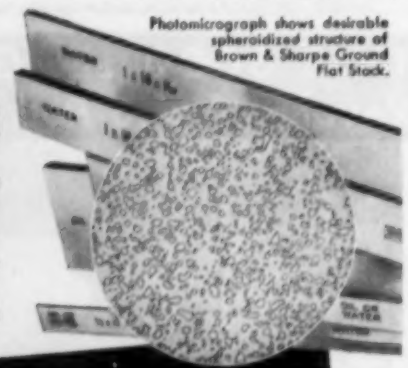
Send for McGill Catalog No. 52

McGILL® precision bearings

McGILL MANUFACTURING CO., INC. 100 N. Lafayette St. VALPARAISO, IND.

If you write maker identify as IEN-2827

Photomicrograph shows desirable spheroidized structure of Brown & Sharpe Ground Flat Stock.



GROUND FLAT STOCK

specially annealed for easier use

Careful annealing of all Brown & Sharpe Ground Flat Stock assures a spheroidized structure that machines to a smoother finish, easier . . . heat treats to high, more uniform hardness with less distortion.

And, for convenience, each piece of stock is marked along entire length to indicate "oil or water", "oil", or "water" hardening. Envelope which protects each piece gives complete heat-treating instructions . . . is color-coded for instant identification of stock.

Available in wide range of sizes. Write for details. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A.

BUY THROUGH YOUR LOCAL DISTRIBUTOR

Brown & Sharpe BS

If you write maker identify as IEN-2828

NOW increased production and long life . . .

with "HARD-BUSHED"

DESTACO

TOGGLE CLAMPS

This is new—Destaco's new clamp design which gives you *hardended* bushings in all series 210, 220, 228 and 240 toggle clamps. The new bushings run full length through the clamp bars from a *larger* bearing surface—and they're deeply serrated to lock in position with no chance of turning in the bars. You get a minimum of wear, smooth, accurate snap action, even under tough production conditions. A feature of our heavier series for some years, this development sets new standards for tooling requiring 500 to 800 lbs. pressures. Further improvements have been incorporated in the "wrap around" construction which strengthens the base.

For any fast clamping action in milling, drilling, welding, bonding, molding, riveting or bolted assembly operations—specify Destaco Toggle Clamps for pressures up to 4000 lbs. Consult our stocking representatives in your area, or select from our 36-page catalog describing over 45 models. Write for his name and your copy today.

DESTACO **DETROIT STAMPING COMPANY**

342 Midland Avenue • Detroit 3, Mich.

If you write maker identify as IEN-2829

HEATING . . Electric furnace fitted with precision stepless control

Source: L & L MFG. COMPANY
138 8th St., Dept. IEN, Chester, Pa.

Bulletin 12-53

Dyna-Trol trade names a new line of electric furnaces for accurate equalization of vertical zone temperatures at any time temperature curve. Heating range is to 2,000 and 2,300 deg. F. Within this range, above 500 deg. F., the time temperature curve can be held within 3 deg. F. The line contains about 40 standard models. The furnace is particularly suited for calibration applications.

Cyber-Tac control is employed as standard equipment. It indicates temperature, holds or cuts off input for a plus or minus 2 per cent of full scale temperature reading. When the cutoff is in use, it will open the input circuit when the temperature comes up to a predetermined value. Power is also cut off in the event of thermocouple failure. The Cyber-Tac plugs into a receptacle installed on the furnace.

If you write maker identify as IEN-2830

TESTING . . Electronic amplifier for laboratory use, output to 3 watts

Source: GENERAL RADIO CO.
275 Massachusetts, Dept. IEN, Cambridge 39, Mass.

Wide frequency range

Type 1206-B is a new unit amplifier designed to operate from the company's Type 1203-A unit power supply. It provides output to 3 watts and requires less than 1 volt input for full output. As a result it can operate directly from the output of electro-acoustic and electro-mechanical devices, such as sound level and vibration meters, to magnify their outputs for such purposes as operating graphic recorders.

Frequency range is from 10 cycles to about 250 kilocycles. Harmonic distortion, into a load of 600 ohms, is less than 1 per cent with 2-watt output in a range from 20 cycles to 40 kilocycles. The amplifier lists at $85, the power unit at $40.

If you write maker identify as IEN-2831

Plier type toggle clamp has been developed by American-La France-Foamite Corp., Dept. IEN, Elmira, N. Y., to close off the flow through a fire hose. Alfco Hose Shut-Off is the designation. The clamp jaws apply over the hose and the toggle lever is brought down into locked position to pinch the hose shut for repair or connection to a nozzle or to an additional hose length. The tool is about 28 in. in length. It weighs 16 pounds. It applies on 1½, 2½ and 3-in. double jacket hose.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-2832

The case of the hesitant sand . . .

Yes, a New England foundry really did have a case like this. As the sand started down through the overhead bins and hoppers, it paused uncertainly, sort of reared back and held up production something terrible.

Fortunately, the foundry superintendent called us for advice.

In short order a battery of CLEVELAND vibrators were installed on the bins, and the sand hasn't hesitated ever since.

Whatever your hesitant material . . . cement, steel chips, ore . . . just tell us — or ask for our detailed literature.

Bin Stuck Lately?

AIR *and* ELECTRIC

THE CLEVELAND VIBRATOR CO.

2736 Clinton Ave. • Cleveland 13, Ohio

If you write maker identify as IEN-2833

RAPID ASPHALT PAINT

Spray or Brush—Dries Quickly Protects Any Surface

A quick-drying, glossy black coating. Provides a hard, tough, long-wearing surface. High insulating and moisture-proof qualities. A "must" for equipment that is constantly exposed to acid fumes or dampness. In six sizes from one pint cans to 55 gallon barrels. For metal, wood, masonry, coated fabrics, etc. For literature, write The Ruberoid Co., 500 Fifth Ave., New York 36, N. Y.

The RUBEROID Co.

Asphalt and Asbestos Building Materials

If you write maker identify as IEN-2834

It's all in the Heat Treatment

Tough heads eliminate spalling.

Special Hammers not required to make stamps safe.

Originators of Super Safe and Safaloy Stamps

WRITE FOR INFORMATION AND PRICES

We specialize in rugged stamps for steel mill use.

Our roll cutter tools outlast all others.

PITTSBURGH STENCIL & TOOL COMPANY
REEDSDALE and SCOTLAND STREETS
PITTSBURGH 12, PA.

If you write maker identify as IEN-2835

IDEAS ON MATERIALS HANDLING PROBLEMS

WRITE FOR 100-PAGE CATALOG 535

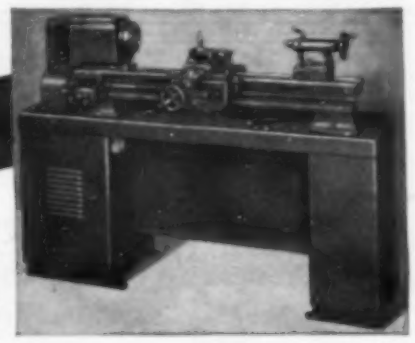
A Barrett engineer will help you select the equipment best suited to your needs —no obligation.

BARRETT-CRAVENS COMPANY
4641 S. Western Blvd., Chicago 9, Ill.
Representatives in All Principal Cities
Canadian Licensee: S. A. Armstrong, Ltd., Toronto, Canada

BARRETT
One Man Does More Than 3 or 4 . . . with a Barrett

If you write maker identify as IEN - 2836

Presenting THE 12" SWING Logan LATHE



IT'S BIG . . .

With 12" swing, 1" collet capacity, 1¾" spindle hole, and 35" center distances this newest Logan handles most lathe work.

IT'S RUGGED . . .

Heavy headstock, massive spindle and rugged construction throughout make it a lathe of precision, stability and power.

IT'S VERSATILE . . .

Hogs out heavy cuts smoothly. Equally effective in high speed production and second operation work. Sustained accuracy at all spindle speeds (38 to 1260 rpm) is inherent in the ball bearing spindle mounting. Features like extra, large compound and cross feed dials adapt it to exacting tool room operations. Durable construction and enclosed design are important advantages in the school shop.

IT'S ACCURATE . . .

Wide-spaced, oversize ball bearing spindle mounting means *sustained* accuracy. Total spindle run-out, 12" from bearing is less than .0005". 6½" wide bed is heavily ribbed for rigidity. 2 V-ways and 2 flat ways precision ground to within .0005". Large dials on new carriage permit accurate readings. Precision built throughout.

IT'S SIMPLE TO OPERATE . . .

No spindle adjustment for any speed from 38 to 1260 rpm. Dials are easy to read, controls easily accessible. Outboard drive simplifies belt adjustment. New operators quickly master it.

IT'S ECONOMICAL . . .

By multiple savings—investment, maintenance, space and power—the 12" Logan brings new economy and profits to lathe operation.

Get full facts—See your Logan Dealer—or WRITE to

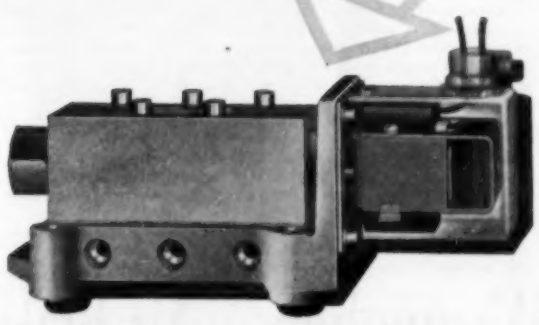
LOGAN ENGINEERING CO.

Lawrence and Lamon Avenues Chicago 30, Illinois

If you write maker identify as IEN - 2837

Quick-As-Wink AIR AND HYDRAULIC Control Valves

FEATURE THIS MONTH

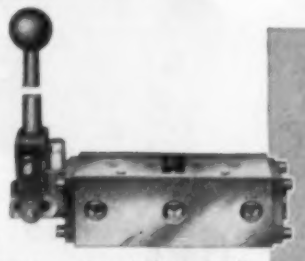


⅛" and ¼" Single Solenoid Valves

They'll give you up to 300 cycles a minute For air to 125 psi—vacuum— or low pressure hydraulic service

● These valves combine the utmost simplicity in design with rugged construction. They will give you millions of cycles of highly satisfactory, efficient, trouble-free service. Small solenoid, with short stroke operates the valve plunger, eliminating levers, links and pins. Low amperage requirement eliminates intermediate relays and simplifies electrical control circuits. Side or bottom pipe connections. Valve body and solenoid are both mounted on an aluminum base and can be removed independently without disturbing the piping. 2, 3, 4 and 5-way actions. *Write for full details today!*

also the following

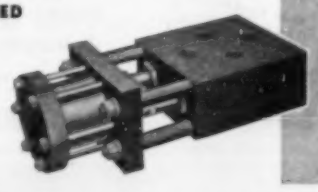


LEVER OPERATED SINGLE PLUNGER VALVES

Two position and three position valves, ⅜" to 1½" sizes; 2-way, 3-way and 4-way actions. Widely used for controlling the operation of single and double acting cylinders or as pilots for operating other valves.

PILOT CYLINDER OPERATED HYDRAULIC VALVES

Two position valves, ½" to 4" sizes, for line pressures from 1000 to 5000 psi. Valve is placed close to the work and operated from a central control point with an easy to handle air valve avoiding operator fatigue.



For Fully Descriptive Data Sheets Write

C. B. HUNT & SON, Inc.

Hand, Foot, Lever, Cam, Pilot, Diaphragm and Solenoid Control Valves

2031 EAST PERSHING STREET • SALEM, OHIO

If you write maker identify as IEN - 2839

GAGE . . Reads work deviation from a master in height or diameter

Source: COSA CORPORATION
626 Chrysler Bldg., Dept. IEN, New York 17, N. Y.

Made in England

Ball mounted spindle in this new Sigma mechanical comparator actuates a ring, lever and thin metal ribbon mechanism to locate the indicator pointer spindle for readings to plus and minus a master set zero. The gage is available for maximum work heights of 6, 12 and 24 in. in each of four magnifications ranging from 500X to 3000X. Throat dimension in each case is 3¼ inches. Overall scale length is 6 inches. The instrument, with 500X magnification, reads to plus and minus 0.006 inch. The one with 3000X magnification reads to plus and minus 0.001 inch. List price starts at $270.

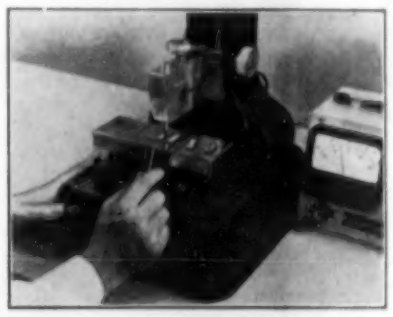
Various attachments include one for internal measurements and an assembly in which work pieces can be loaded on a multiple station turret. A comparator head and interchangeable scale plate for a given part fitted to the main scale assist in indentification of the readings.

The work is positioned on a reversible anvil after the spindle is lifted into the clear by means of a lever at the rear of the housing. A reading is obtained upon release of this lever, the pointer moving downward for deviations below the set standard and upward for deviations above it.

If you write maker identify as IEN - 2840

GAGE . . Electronic comparator reads over and under master setting

Source: CLEVELAND INSTRUMENT CO.
733-37 Carnegie Ave., Dept. IEN, Cleveland 15, Ohio



Supersensitive

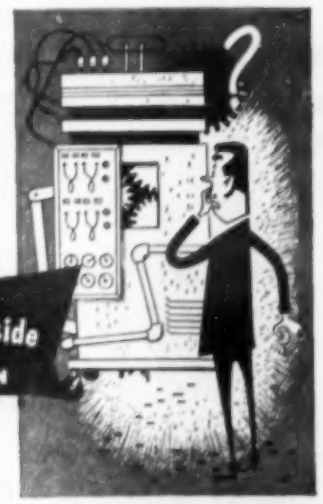
Sensitivity of the Micro-Ac comparator, previously described IEN-1426-52, has been increased from 0.00002 in. per division to 0.0000005 inch. The double scale amplifier also is supplied to read to 0.000001 in. per division when a switch is moved on the control housing from the finer scale. Construction is the same as in the previous design in which an induction type gage head, with a frictionless movement, is mounted adjustably on a rigid stand to operate in connection with a drift free industrial type amplifier and meter. The half-millionths scale divisions are approximately 0.1 in. apart. Magnification is just under 200,000 X.

The head adjusts for work measuring ⅞ to 14¾ in. in height above the base. It is fitted with a replaceable contact tip made of carbide, steel, sapphire or a diamond. This tip can be lifted 0.003 in. to assist in positioning the work by operating a push button connecting through a flexible shaft at the front of the stand.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2841

The freezer's automatic
The stove and TV too
The washer shuts itself off
Then starts itself anew
The car's a
Mushomatic Eight
Remote controlled by knee
And who's in charge of
all this stuff?
Unautomatic me!



CASTINGS on the lighter side by WELLMAN

If weight is a factor in the product *you're* in charge of purchasing, engineering or manufacturing, turn *automatically* to WELLMAN.

We've been in charge of producing castings on the lighter side, aluminum and magnesium, for almost half a century.

Catalog No. 53 will fill you in on the details.

Well-Cast MAGNESIUM AND ALUMINUM CASTINGS
Well-Made WOOD AND METAL PATTERNS

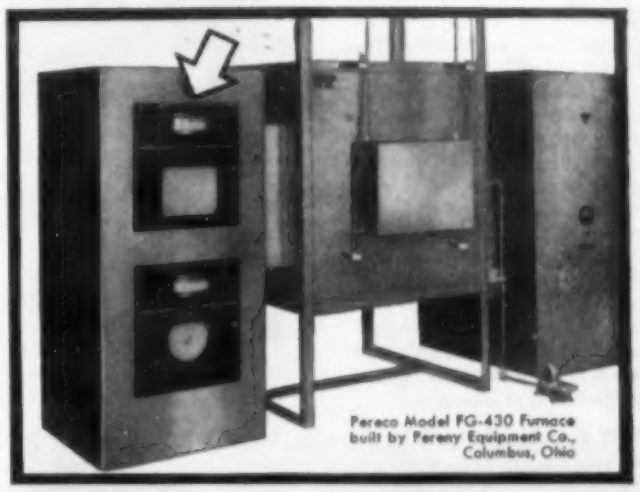
THE WELLMAN BRONZE & ALUMINUM CO.

Dept. 9, 12800 Shaker Boulevard • Cleveland 20, Ohio

If you write maker identify as IEN - 2842

BARBER COLMAN

Wheelco Recorder-Controllers



Pereco Model FG-430 Furnace built by Pereny Equipment Co., Columbus, Ohio

standard on new PERECO furnaces!

Wheelco Capacilogs and Chronotrols were selected for this new Pereco heat-treating furnace because they control temperatures accurately, without costly maintenance. Investigate these simply designed, low-cost instruments, offering a variety of automatic systems for controlling process variables. Write for Bulletins C2-2 and CH-2.

Factory-trained field engineers in all principal cities

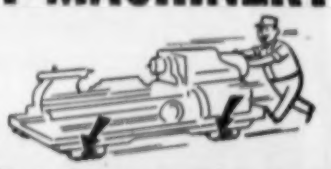
WHEELCO INSTRUMENTS DIVISION • BARBER-COLMAN COMPANY
Dept. C, 1516 Rock St., Rockford, Illinois

If you write maker identify as IEN - 2843

now you can

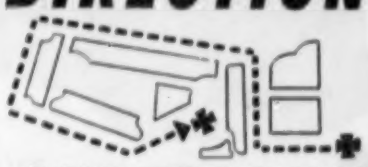
MOVE HEAVY MACHINERY

or tons of equipment, materials or supplies with a roller skid having the capacity to carry loads 3200 times its own weight . . .



IN ANY DIRECTION

. . . making 90° turns—or ANY kind of turn you desire up to 360°—giving you maneuverability into the tightest spots . . .



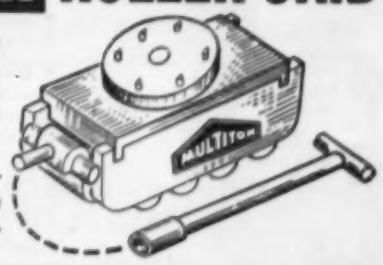
QUICKLY AND EASILY

Does away with old-fashion roller-bar methods. Light in weight, easy to store, you save labor and costly handling . . .

WITH THE NEW MULTITON ROLLER SKID

EQUIPPED WITH THE UNIVERSAL SWIVEL PLATE ACCESSORY . . .

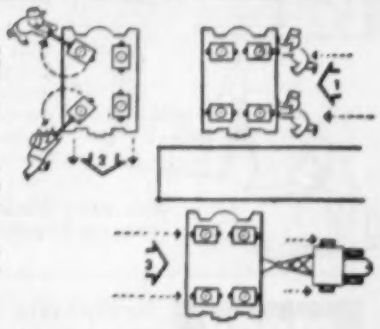
Specially designed for easy moving and turning of even the heaviest loads.



HERE'S HOW MULTITON CAN WORK FOR YOU!

As in this example . . .

1. Production machine is moved broadside out of location. Note position of four Universal Swivel Plate-Equipped MULTITON ROLLER SKIDS.
2. Crew is now swiveling two left-hand skids 90°, while right-hand skids have already been turned.
3. If a longer movement is necessary, power is used to pull load.



Let us show you how MULTITON can meet your specific needs. Write for Bulletin 1E today.

STOKVIS ✿ EDERA & CO., INC.

95 MADISON AVE., NEW YORK 16, N. Y.
MUrray Hill 3-4935

If you write maker identify as IEN - 2845

New AIR PRESS

One adjustable stand takes air cylinders (3" or 4" bore) single-acting or double-acting. Double-acting cylinder (shown) furnished with any length stroke from 0" to 36". The press illustrated has 4" stroke. Single-acting cylinders have maximum 4" stroke; return stroke by internal spring. Upper ram of double-acting presses has depth stop nuts and collars regulating the stroke exactly. Single-acting press has no upper ram nor depth stop adjustment. Mounting bracket permits vertical and radial adjustment. Solid steel column. Table is machine surfaced but not hardened, to allow mounting of special tooling.

NEW CATALOG READY!

The new Mead Air Power Catalog shows Mead's versatile new Column Presses, and full line of single and double-acting cylinders also air-operated Presses, Vises, Chucks, Hammers, Work Feeders — for faster, money-saving production. Write!

MEAD
SPECIALTIES COMPANY

4114 N. Knox Ave., Dept. EA-34, Chicago 41, Ill.

If you write maker identify as IEN - 2846

Announcing the POWRWORKER "26"

FEATURE BY FEATURE, IT'S ENGINEERED TO MEET YOUR OWN HANDLING REQUIREMENTS

Pallet: 4000, 6000 lbs. cap.

Platform: 4000, 6000 lbs. cap.

Stacker: 2000, 2500, 3000 lbs. cap.

Detailed job-studies in customer plants, warehouses and terminals dictated the features of the POWRWORKER "26." No truck on the market today can match the POWRWORKER'S combination of *user-benefits:*

- **Maximum Maneuverability**—Only 26" longer than the load, the shortest standard truck on the market.
- **Light Weight**—Completely fabricated construction combines maximum strength with least weight.
- **Stability**—Close-to-the-floor, low center of gravity
- **Great Efficiency**—Double reduction of spur gears gives maximum ton-miles at least power cost.
- **Balanced Load Distribution**—Double lift cylinders for smooth lifting and lowering.
- **Safety**—Deadman switch cuts power when brake is applied, handle automatically returns to brake-position.
- **Easy to Service**—All operating units accessible without lifting or dismantling. Drive wheel tire is quickly demountable.

We invite you to compare the 1954 POWRWORKER with any truck on the market! For details, call your local Clark dealer, listed in the Yellow Pages. Or send the coupon for literature.

Ask your Clark dealer about Clark's low-cost Pay-As-You-Go leasing plan.

CLARK EQUIPMENT

POWRWORKER SECTION
Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 49, Michigan

☐ Please send POWRWORKER literature. ☐ Have representative call.

Name_____
Firm Name_____
Street_____
City_____ Zone____ State____

If you write maker identify as IEN - 2848

LIGHTING . . Emergency unit switches to battery on circuit failure

Source: ELECTRIC CORD CO.
195 William St., Dept. IEN, New York 38, N. Y.

Floats on circuit

Storage battery in this new Light Warden Chargomatic-88 emergency unit is assembled in a glass jar to meet requirements of the National Electrical Code and Underwriter's Laboratories. The battery is a 6-volt 105 amp. hr. unit. Visible balls indicate the condition of charge. Assembly includes a charger that takes its power from a 110-volt ac. source to keep the battery continuously in correct operating condition.

Chromium plated, adjustable sealed beam flood lights are mounted on the housing. The battery will operate them for about 12 hours. Three additional lights can be connected into the circuit and placed in various remote positions. List price with two lights and the battery is $95. Additional lights add $10 each.

If you write maker identify as IEN - 2849

FEEDING . . Rotary airlock unit to handle granular materials, sludge

Source: PRATER PULVERIZER CO.
1503 S. 55th Court, Dept. IEN, Chicago 50, Ill.

Controls flow

The rotor, in this new 12-in. Model PAV-12 rotary feeder, acts both as a feeding element and an airlock to prevent air or gas leakage into or out of the equipment on which the unit is installed. The feeder operates equally well under pressure or suction. It is available in complete assembly with a drive or, as illustrated, for the user to apply the driving equipment.

Applications include handling of finely ground or granular abrasive materials such as pulverized phosphate rock, fly ash, cement, clay, silica, aluminum, sewage sludge from equipment such as rotary dryers, coolers, dust collectors, electrical precipitators, bins, hoppers, pressure vessels.

If you write maker identify as IEN - 2850

Plastic templates, made of translucent Plexiglas, are available to order from Hermes Engravers, Inc., 13 University Pl., Dept. IEN, New York 3, N. Y. The templates are designed for tracing standardized parts and outlines to minimize drafting time where original work is not required. Each template is made to specifications from original blueprints. Thickness is 0.03 inch. The outlines are beveled at 15 deg. to clear a tracing pencil.

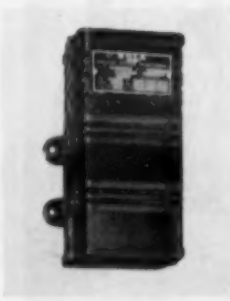
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2851

A PAID NEWS ADVERTISEMENT BY SOLA ELECTRIC CO.

AUTOMATIC VOLTAGE REGULATION

Sola Static-Magnetic Transformers Regulate Voltage Within ± 1%



Much electrical and electronic equipment requires voltage regulation for best operation. Sola constant voltage transformers are ideal means for providing the voltage at which equipment was designed to operate.

The Sola Constant Voltage Transformer is a static-magnetic regulator. It has the following advantages over regulators which depend solely upon saturation of core materials for their regulation action or electronic types employing tubes.

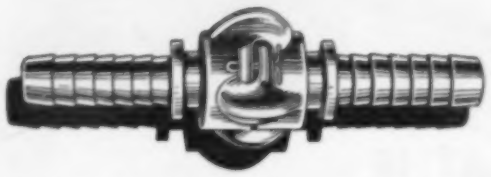
1. Ultra-fast regulating action, 1.5 cycles or less.
2. No moving or renewable parts for manual adjustments.
3. Completely automatic, continuous regulation.
4. Self-protecting against short circuits on output or load circuit.
5. Current-limiting characteristic protects load equipment.
6. Can be substituted for conventional non-regulating transformers.

These units are described in a 4 page folder. Write on your letterhead for a copy of Bulletin 13C-CV-170.

SOLA ELECTRIC CO.
4633 West 16th Street, Chicago 50, Ill.

If you write maker identify as IEN - 2852

"AIR KING"



QUICK-ACTING, UNIVERSAL TYPE

HOSE COUPLING

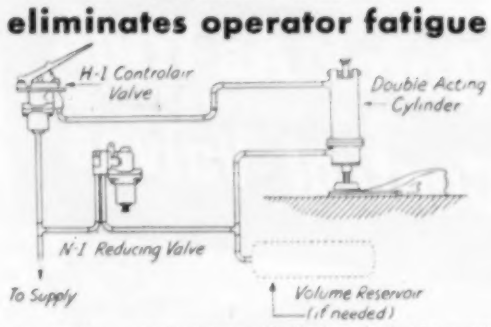
A strong, durable coupling for quick, tight connections on field or factory air hose. Plain design — no parts to get out of order or clogged with dirt. Made in hose ends and male and female threaded pipe ends. Completely interchangeable. Patented safety locking device is proof against vibration and rough handling. Malleable iron (rustproofed) or bronze.

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.
PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS
"BOSS" "GJ-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

If you write maker identify as IEN - 2853

Pneumatic control eliminates operator fatigue



● An eastern manufacturer of ladies' pocketbooks wanted a better control system for his 15 small presses. He wanted a control that would apply light pressure to a pocketbook frame while the operator fitted material into the frame. Then, full pressure was needed to clinch the frame. A pneumatic system supplied by Westinghouse Air Brake Co. was the perfect answer.

The operator controls the pressure to the press with a Westinghouse foot-operated Controlair® Valve. He can select the exact force he needs; and both his hands are always free to work on the pocketbook. As a result, the work is less tiring for the operator; and he can work faster and more accurately. Scrap loss has been reduced.

Westinghouse pneumatic controls can give the same advantages on your machines. Write for information, or call the nearest Westinghouse Air Brake Distributor.

Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION — WILMERDING, PENNA.

Factory Branch: Emeryville, Calif.
In Canada: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

If you write maker identify as IEN - 2854

if so . . .

● Check with us and we will recommend a PREP PRODUCT that will please both of you and give you superior results at present cost or equal performance at lower cost . . . We have a complete line of metal cleaning and conditioning . . . rust-removing . . . and zinc or iron phosphatizing materials.

Send for Bulletin

● We have available the materials and processes for any Government Specification relating to metal treatment.

NEILSON CHEMICAL CO.
MANUFACTURERS OF METALPREP

2982 Tecumseh Road Windsor, Ontario — 6584 Benson St., Detroit 7, Mich. — 3411 Union Pacific Ave. Los Angeles 23, Calif.

If you write maker identify as IEN - 2855

LIFTS and PULLS at ANY angle . . .

Move machinery, pull boiler tubes, join belts, set pipe, lift motors—for 1001 uses pick up a

CM PULLER

¾ TON MODEL WEIGHS ONLY 13 LBS.

● Operated by a ratchet handle requiring no more effort than an automobile jack. Objects up to 12,000 lbs. can be lifted or pulled . . . vertically, horizontally or at any angle. Anyone can operate. Automatic brake holds loads at any point. Inexpensive. Sturdy. Safe. Herc-Alloy flexible welded load chain.

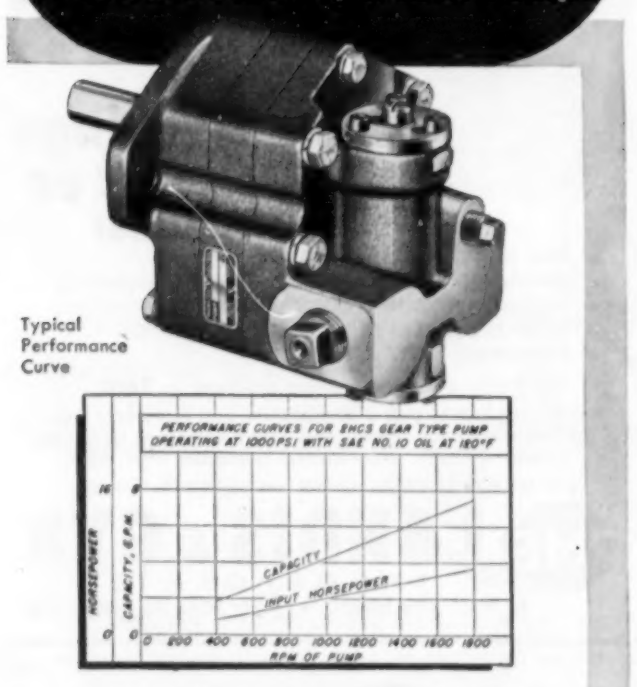
Send for PULLER Bulletin 146 Illustrated and with prices.

Capacities: ¾ to 6 ton

CHISHOLM-MOORE HOIST DIVISION
COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND
In Canada: McKinnon Columbus Chain Limited, St. Catharines, Ontario

If you write maker identify as IEN - 2856

For Proven Performance and Lowest Cost
Check the Webster Line of Hydraulic Pumps



Typical Performance Curve

● It will pay you to get the facts about WEBSTER Gear-Type Hydraulic Pumps before buying *any* pump. Here is a *complete line* of rugged, dependable pumps from 10 gph. to 10 gpm., engineered to operate efficiently at pressures up to 1200 psi. at speeds of 3600 rpm. or less—90 pumps of various designs and capacities to meet the widest range of requirements!

WEBSTER pumps are the product of skill acquired during nearly a quarter-century of experience. They have established an enviable reputation for efficient, dependable operation. All WEBSTER pumps lend themselves readily to many forms of adaptation—and to modification for special installations. All are available with built-in relief valve, if desired.

Whenever you require pumps for lubricating, oil circulating, filtering, transfer or quiet hydraulic power applications, we invite your inquiries.

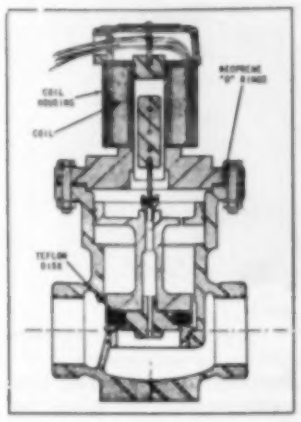
***Write** today for catalog which includes pump data sheets on which you can describe your requirements*

OIL HYDRAULICS DIVISION
WEBSTER ELECTRIC
RACINE, WISCONSIN
ESTABLISHED 1909
"Where Quality is a Responsibility and Fair Dealing an Obligation"
MANUFACTURERS OF A COMPLETE LINE OF OIL HYDRAULIC PUMPS

If you write maker identify as IEN - 2858

VALVE . . Solenoid actuated for line pressures to 1,000 pounds

Source: ATKOMATIC VALVE CO.
545 Abbott St., Dept. IEN, Indianapolis 25, Ind.



Removable seats

Cast iron or cast steel can be specified in the body construction of the company's new Series-4000 valve to handle fluids normally injurious to brass or bronze but not to ferrous metals. The cast iron construction rates to 500 lb. and to 200 deg. F. The cast steel is available for 500 lb. at 450 deg. F. or for 1,000 lb. at 200 deg. F.

Free operation, without danger of sticking, characterizes the construction in which provision has been made for expansion of the various parts in line with pressure changes. The valve is available in sizes from ¼ to 2 inches. It is a companion design to the bronze valve previously described IEN-10060-53.

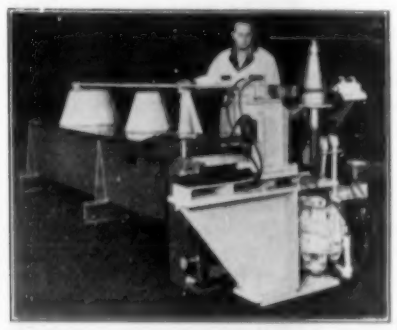
Closing the solenoid circuit lifts the pin, opens the central port, permits escape of pressure so the plunger lifts and the valve is open. Opening the solenoid circuit permits the pin to return and close the central port. Then the valve returns to "down" position at a speed determined by the escape port opening in the operating piston.

Seating is on a Teflon disc. The body and bonnet are sealed with neoprene. The stainless steel pilot seat is "hooded" to protect it and assure accurate seating of the pin.

If you write maker identify as IEN - 2859

BENDING . . Hydraulic machine for plain or finned tube to 1½ inch

Source: WALTER P. HILL INCORPORATED
22183 Telegraph Road, Dept. IEN, Detroit 19, Mich.



Semi-automatic

The mandrel around which tube is bent in this new hydraulic machine is in the form of a cone. The cone is mounted so it can be adjusted vertically and horizontally to position the bend at a desired radius on its tapered surface. Hard wood cones apply on it for an overall radius range from ¾ in. to 2 feet. The machine will take tube to 40 ft. in length. It bends to 180 degrees.

Control centers at three manually operated hydraulic valves to make the set-up adjustments and to govern the bending cycle. Pressure is supplied by the company's No. 3 hydraulic power pack. It rates 3 gpm. at 1,000 pounds. It is driven by a 15-hp. motor. Hydraulic cylinders, with 2-in. bore, control the wiper and locking dies. A 4-in. hydraulic cylinder controls the horizontal adjustment for the bending die and a second 4-in. cylinder controls the vertical adjustment. The machine measures 16 by 7 by about 5 feet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2860

Ask us to explain why *ENGINEERED* SPONGE GASKETS are different!

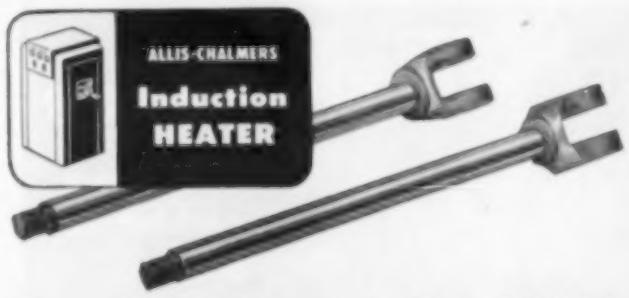
For example take this gasket. Instead of punching it out in one piece, with the center material wasted . . .

we die cut it in sections, saving over half the material, then permanently weld the sections into a single piece.

Many another gasket problem has been engineered by us into a better product at surprisingly lower cost. Specialists in chemically blown sponge, PVC sponge, silicon sponge, foam rubber, neoprene and cork gaskets, we invite your inquiry for any gasket need.

J. M. CRANZ CO. INC.
2671 MAIN ST. BUFFALO 14, N. Y.
ENGINEERED MOULDED RUBBER PRODUCTS

If you write maker identify as IEN - 2861



Brazing Speed Up 800%

WHEN HIGH PRODUCTION Allis-Chalmers induction heaters replaced torch brazing methods in an aircraft plant, eight parts, like those above, were brazed in the time it formerly took for one.

In addition, percentage of rejects due to warpage was cut 80%. Reason? Heat is induced rapidly to uniform, accurately controlled depth. Center or core of metal remains relatively cool so expansion is minimized . . . warpage reduced.

VERSATILE, TOO! The two Allis-Chalmers induction heaters are used on a wide variety of jobs, including brazing piston rods on clevis assemblies, brazing caps on hydraulic ram cylinders, and case hardening bearing surfaces on hydraulic valve parts, connecting rods and others.

A simple change of work coils is all that's needed to change from one job to another.

Find out what Allis-Chalmers induction heaters can do to speed production, improve quality in your plant. Call your nearby Allis-Chalmers district office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-4172

ALLIS-CHALMERS

If you write maker identify as IEN - 2862

Fans . . Blowers FOR ALL INDUSTRY

"Standard Units or Custom Design"

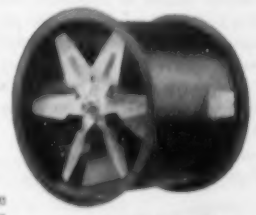
DOUBLE SWIVEL AEROSPOT

Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special custom designed equipment can also be furnished. Our staff of engineers is at your disposal for competent advice on any ventilating problem. Correspondence invited, without obligation.

SEND FOR CATALOG TODAY!

For column or wall mounting. Saves valuable floor space. Direction of blast adjustable: 360° around Spindle Axis, 90° around Motor Support Axis. Sizes, 20" to 36".

6 Blade DYNAFLOW Unit
Also available in two and four blade types. Sizes, 16" to 36".



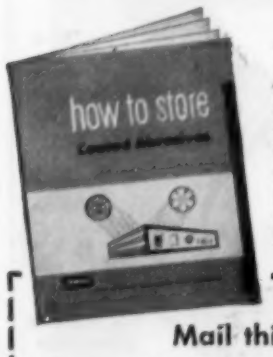
DUCTYPE BLOWER
Direct driven, single or tandem fan units. Also available with belt drive. Sizes, 16" to 36".

SOUTH BEND AIR PRODUCTS, Inc. 322 E. COLFAX AVE. SOUTH BEND, IND.

If you write maker identify as IEN - 2863

Storing Abrasives?

Armour's helpful booklet shows the economical, time-saving way!



This booklet from Armour, maker of *precision* coated abrasives, tells you how to stop losses—in time and money—from improperly stored coated abrasives. Clogging, filling, cracking, loss of grains—these are some of the things proper storage can prevent. Send for your free copy of "How to Store Coated Abrasives."

Mail this coupon today

Please send booklet "How to Store Coated Abrasives."

Name .....
Firm .....
Address .....
City ..... *Zone* ..... *State* .....

ARMOUR *Coated Abrasives*

Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as IEN - 2864

LARGEST SELLING CUTTERS FOR TOUGH DIE STEEL

Be sure of *top performance* in die sinking milling cutters . . . specify T-J! They're preferred everywhere today in die and forge shops . . . because T-J Cutters are *extra sturdy* . . . you can raise the feed!

Designed for speed, accuracy and long life . . . hold a sharp edge longer on job after job . . . less breakage! Made from an extremely high grade steel . . . properly machined . . . scientifically heat-treated and accurately ground. Wide range of styles and sizes to *reduce your* die costs. Send for new catalog 4-153. The Tomkins-Johnson Co., Jackson, Michigan.

T-J
TOMKINS-JOHNSON

If you write maker identify as IEN - 2865

accurately controlled electric heat

HEATING LIQUIDS
MELTING SOLIDS
in Tanks and Vessels

WATLOW
IMMERSION HEATERS

The most efficient method of heating fluids in tanks, kettles, steam tables, boilers, etc. Watlow Units are designed for low internal operating temperatures —which results in maximum life. Available in brass, steel or nickel alloy, also stainless steel sheaths, for maximum corrosion resistance. Standard sizes: ¾" to 2" dia.; 3½" to 60" lengths; 10W-35W densities. Special sizes and shapes built to your specifications.

Send for your free copy of *Watlow Electric Heating Units Catalog*

WATLOW
Since 1922—Designers and Manufacturers of Electric Heating Units
ELECTRIC MFG. CO.
1370 FERGUSON AVE.
SAINT LOUIS 14, MO.

Take the GLARE out of Micrometer Reading with the *"Lustro-Chrome"* MICROMETER

MEASURE TO 1/10,000 th

ALL GRADUATIONS ARE WELL-DEFINED BLACK LINES ON DULL CHROME SURFACE WHICH MEANS EASIER AND SURER READING, EVEN IN POOR LIGHT.

GUARANTEED ACCURATE WITHIN ONE HALF OF A TEN THOUSANDTH OF AN INCH.

THE CHROME SURFACE IS EXTREMELY HARD AND NON-PEELING. IT PROTECTS THE TOOL INDEFINITELY FROM RUST AND DISCOLORATION.

DROP-FORGED MODEL WITH CHROME FINISHED MICROMETER HEAD, 10th VERNIER, FROM $9.25 UP.

No. 901 C 0-1" size with LOCK NUT and RATCHET and 10th vernier as shown $13.25

This tool with TUNGSTEN CARBIDE tipped anvils $15.75

Dealers! Here's a real profitable line

ASK FOR CATALOG ON OUR COMPLETE LINE OF MICROMETERS IN ALL SIZES.

GEO. SCHERR CO., INC.
COMPLETE LINE OF PRECISION INSTRUMENTS
200 -EN LAFAYETTE STREET • NEW YORK 12, N. Y.

For Your Special Information

ALL MAKERS ARE LISTED IEN S-4

The 1954 Edition of Thomas' Register is now going into the mail. Purchasing departments everywhere will have the copies they ordered, some as far back as a year ago, some on orders that have been standing for many years. Right now we understand a few copies of the new edition are still available but, if experience of the past several years is any indicator, the "sold out" sign will be hanging up shortly.

It is customary in a good many plants to see that the edition of the preceding year is sent to the shop so its departments will have the reference information. In other cases some purchasing departments place their orders in alternating years. Our records indicate that average life in service of any given issue is about three years. Perhaps you will want to check with your own purchasing department and secure its 1953 edition for your own use.

Please remember, in any case, that we stand ready here, as a sort of supplement to the Register, to find sources for you for anything you want in your plant and product activities if you do not find it on first look yourself. There's no obligation. We are happy for the opportunity to help.

FOR YOUR APPROVAL IEN S-5

We hope you will have noted the less formal approach we have made to the new literature reported in IEN in the past year. We hope, particularly, that it meets your approval. The change meant more detail selection, a lot more care in making them easily read without sacrifice to basic facts.

Your suggestions were responsible for the new appearance. Now we will welcome your comments to tell us if we have done the job satisfactorily or if we can make additional changes. Put down what you think on the reader service form when you send it through for servicing.

U. S. SAVINGS BONDS IEN S-6

Employee participation in U. S. Savings Bonds is a major factor today in helping to combat inflation. At the same time the actual dollars you put in now, with dollar value down as it is, are likely to grow in value considerably in excess of the actual interest growth as our new government goes forward with its job of organization and economy. It has plenty of opportunity when you consider the fact that the present "tax take" is 21 times what it was in 1939.

If you write maker identify as IEN - 2867

FORT WORTH INDUSTRIAL EXHAUST FANS

FOR PNEUMATIC CONVEYING AND DUST COLLECTING SYSTEMS

THE HEART of AIR HANDLING IS THE FAN

FORT WORTH
S-2 EXHAUST FAN has many features that assure satisfactory operation

- ★ Direction of discharge easily changed
- ★ Direction of rotation easily changed
- ★ Housing, blastwheel, and bearing stand are ruggedly constructed for vibration free operation
- ★ Designed for efficient operation
- ★ Exclusive Paddle-type construction enables blastwheel to handle long stringy material through fan.
- ★ Bearings: two anti-friction, self-aligning pillow blocks

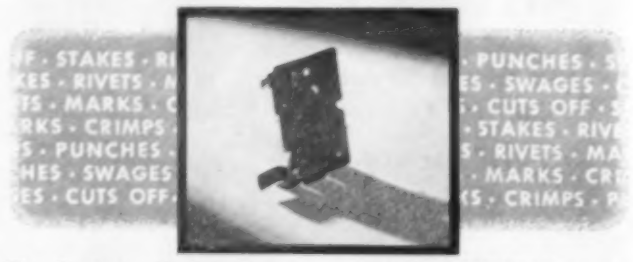
Write for catalog 500, which gives performance data and dimensions of Fort Worth Exhaust Fans.

FORT WORTH STEEL AND MACHINERY CO
Dept. 23, 3600 McCart, Fort Worth, Texas
FORT WORTH WAREHOUSES:
• CHICAGO • MEMPHIS • LOS ANGELES • ST. LOUIS • ATLANTA • SAN FRANCISCO • KANSAS CITY • JERSEY CITY • HOUSTON

OTHER FORT WORTH PRODUCTS
ROLLER CHAIN SPROCKETS
SCREW CONVEYORS and ACCESSORIES
SCREW ELEVATORS

If you write maker identify as IEN - 2868

ELECTROSTAKE CUTS COSTS
at Eastman Kodak



The Eastman Kodak Company uses ELECTROSTAKE—the automatic solenoid-operated staking machine—to stake shutter parts for Brownie Hawkeye cameras. ELECTROSTAKE presses the assemblies together—then *automatically* delivers the staking blow. Better control of the impact cuts scrap . . . and because ELECTROSTAKE is faster and simpler to use, operators are able to stake far more shutter parts than they could on foot-powered machines.

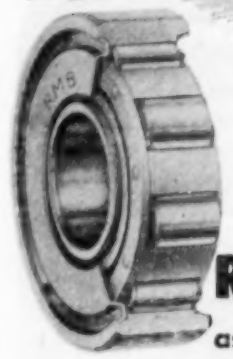
Delivers impacts up to 3500 lbs.—hold-down pressure can be pre-set from 0 to 20 lbs. Economical to buy, operate and maintain. Plugs into any 115 V., A.C. outlet.

Write—or phone Bigelow 4-6370—for folder showing complete line of Black & Webster electric production tools.

BLACK & WEBSTER, INC.
Dept. 17, 445 Watertown Street, Newton 58, Mass.
Solenoid-operated Production Tools

If you write maker identify as IEN - 2869

HERE'S WHAT *We* MEAN BY—



Miniature BEARINGS!

Roller Bearings
as small as **0.4724" OD**
an **RMB** *first*

- FOR HEAVY RADIAL LOADS
- SEPARABLE RACEWAYS FOR EASIER ASSEMBLIES
- SHIELDED AGAINST CONTAMINATION
- SIZES FROM 0.4724" OD TO 1.0236" OD
- AVAILABLE NOW

Bring your miniature bearing problems to RMB.

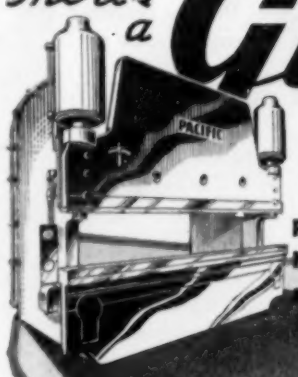
A complete line of over 250 miniature and instrument bearings including pivot, radial and roller types are available for prompt delivery. Experimental quantities from stock.

Write for catalog 13, or see our catalog in Sweet's Files.

RMB LANDIS & GYR INCORPORATED
45 WEST 45th STREET • NEW YORK 36, NEW YORK

If you write maker identify as IEN - 2870

There's a **Giant** *growing in the West*



PACIFIC Press Brakes Now Outsell All Competitors Combined in California and Oregon

This Revolutionary Hydraulic Press Brake, First Introduced in 1946, Has Gained a Tremendous Acceptance by Western Industry and is Now Rapidly Casting Its Shadow Across the Entire Nation.

THE PACIFIC is the only modern, advanced press brake designed for 1954—It can't be JAMMED—It can't be OVERLOADED—The stroke length is immediately ADJUSTABLE to match the job; imagine changing from a 1" to a 36" stroke in a few seconds! THE PACIFIC HYDRAULIC PRESS BRAKE is VERSATILE—It can be used for Deep Drawing, Heavy Punching, Air Bending, even Straightening. Custom presses can be delivered in a few weeks. Prices are competitive including freight costs from the West Coast. Sales and service available in all major cities.

PACIFIC INDUSTRIAL MFG. CO.
848 - 49th Avenue - Oakland, Calif.

If you write maker identify as IEN - 2871

NOW YOU CAN HAVE **METERED SURETY** IN HANDLING CORROSIVE LIQUIDS

All Stainless Steel Meter

Rotocycle meter, cut away to show the all-revolving rotor construction.

CONTROLS FORMULAS, COSTS, INVENTORIES

Rockwell Model 2-BC stainless steel meters provide indisputable records for the quantities of corrosive liquids used in mixing formulas. They provide basic accounting facts for accurate cost identification; for inventory controls; for tax analysis purposes.

These meters are constructed *inside and out* of stainless steel. Rated capacity 100 gpm. Quantity control registers and electrically actuated remote registration systems are available. Described in bulletin OG-403. Write *Rockwell Manufacturing Co., Dept. B-2. Pittsburgh 8, Pa.*

YOU CAN RELY ON ROCKWELL

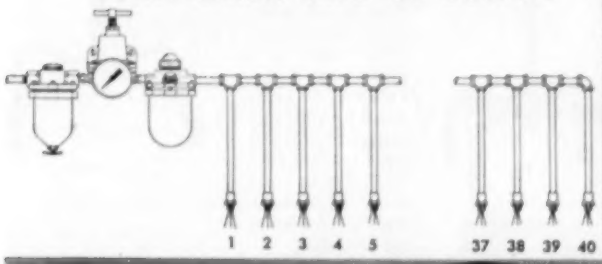
ROCKWELL INDUSTRIAL METERS

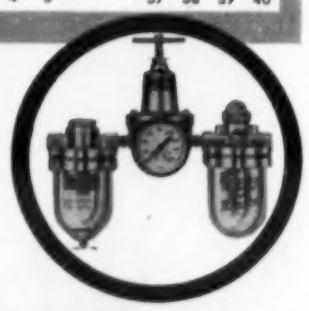
If you write maker identify as IEN - 2872

tests prove

Norgren Micro-Fog Lubricator

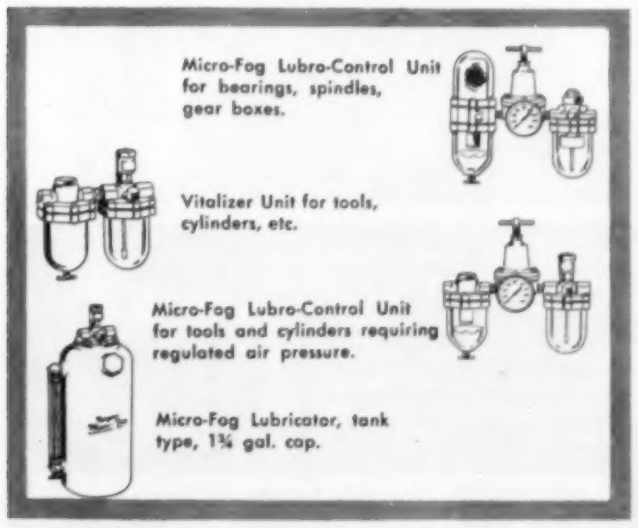
• gives absolutely uniform lubrication thru 40 outlets





The extremely fine air-borne Micro-Fog provides absolutely uniform distribution of lubricant through as many as 40 outlets...for bearings, spindles, gear boxes, etc.

Two exclusive features of the Norgren Micro-Fog Lubricator—constant oil level and metering of oil feed by air—assure an exactly uniform and accurately regulated rate of feed.



PIONEER AND LEADER IN OIL-FOG LUBRICATION FOR 26 YEARS

Valves • Filters • Regulators • Lubricators • Hose Assemblies

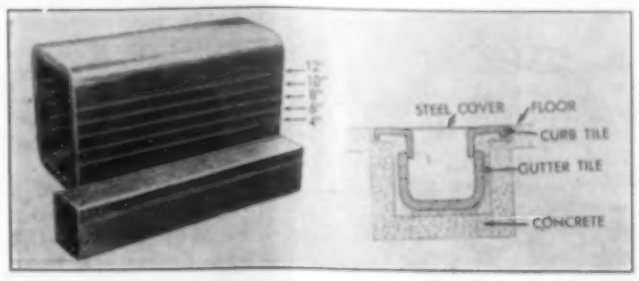
WRITE FOR NEW CATALOG No. 600

C. A. Norgren CO.
3432 So. Eliot, Englewood, Colo.

If you write maker identify as IEN - 2874

PIPE . . Vitrified clay drain for use in corrosive sewage disposal

Source: LOGAN CLAY PRODUCTS CO. Box 698-A, Dept. IEN, Logan, Ohio



Efficient and out of sight

Protection is provided permanently against corrosion by acids and other chemicals when this new vitrified clay channel pipe is employed in sloping drain installations as shown in the sectional view in the illustration. The pipe, or gutter tile, is known as Chemi-Drain and is manufactured in double sections with five grooves or "kerfs" in each side. These permit dividing the double sections into single sections of various depths from 4 to 12 inches. A companion unit, known as CurbTile, is employed to cover the upper edges of the channel to bring the installation flush with the floor. Installation is completed with a grille or a solid floor plate.

The gutter tile measures 12 in. in width by 18 in. in length and is manufactured in 3-ft. lengths. This produces 6 ft. of Chemi-Drain when split at the kerfs. Price per channel foot is $1.20 or $7.20 per block. The CurbTile is manufactured in a block measuring 8 by 8 in. in 3-ft. lengths. This block splits to become 6 ft. of curbing. List price is 35 cents per curb foot.

If you write maker identify as IEN - 2875

TRUCK . . Hand hydraulic unit to carry and up end 1,000 lb. rolls

Source: SERVICE CASTER & TRUCK CORP. 448 Somerville Ave., Dept. IEN, Somerville 43, Mass.

Built to order

Rolls of cloth, paper, plastic, metal are moved onto the 22 by 57-in. cradle platform of this new Up-Ender truck while the cradle is lying in horizontal position. The truck is then moved by hand to a location where the roll is to be placed on end. At this point, a locking lever is turned so the platform can tilt, as shown in the illustration, when a hand hydraulic pump is operated to lift the platform support frame. A toe plate at the end of the cradle prevents the roll from sliding off until it is in vertical position. Then the truck is removed by hand.

Height of the cradle platform, in horizontal carrying position, is 12 inches. Overall base width is 31 inches. Overall height is 38 inches. Mounting is on two 5-in. plastic wheeled swivel casters and two 6-in. plastic wheels. A floor lock is part of the standard equipment. List price is about $600.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2876

Contains all the information you need to select exactly the right Hand Numbering Machine or Metal Dater for any job, plus scores of time-saving ideas. Includes uses, figure sizes, performance specifications for all standard models. Supply limited. *Write for your free copy.*

WM. A. FORCE & COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 5, N. Y.

If you write maker identify as IEN - 2877

Cutting costs in thousands of drafting rooms

Kodagraph Reproduction Materials eliminate tedious retracing . . . produce better shop prints . . . simplify print production. Whether you make your own prints or use a blueprinter, it will pay you to know them.

Paper, gives you positive photographic intermediates directly from blueprints and other negatives.

Kodagraph Contact Paper is designed for use in contact photocopy printers . . . produces outstanding negatives.

Kodagraph Autopositive Papers and Film produce positive photographic intermediates without a negative step; can be exposed in standard print-making equipment...processed in standard photographic solutions. Fast, easy roomlight handling!

Kodagraph Projection Papers give you highest quality enlargements from microfilm or other reduced-scale negatives.

Write today for free booklet which describes all these materials.

Kodagraph Repro-Negative

Kodagraph Reproduction Materials

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN - 2878

USE LESS... *for Quicker Action*

Rockwood's Double Strength FOAM Liquid is faster spreading, more fluid and flows freely at sub-zero temperatures. It covers burning surfaces faster, seals off combustible vapors and flows freely around obstruction. Three parts of FOAM mixed with 97 of water form an excellent foam blanket that quickly re-seals if broken.

FOAM saves in many important ways. Saves cost of use, because *only 3%* of it forms your extinguishing agent. Saves storage space and shipping costs because it's concentrated. Saves vital time by its speedy, thorough action.

Write for *"Fire Fighting Products,"* Rockwood's illustrated catalog. Distributors in all principal cities.

ROCKWOOD SPRINKLER COMPANY

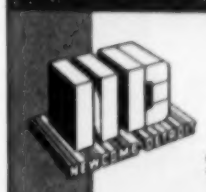
Engineers Water . . . to Cut Fire Losses

40 HARLOW STREET, WORCESTER, MASS.

If you write maker identify as IEN - 2879

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



INDUSTRIAL OVENS
•
SPRAY BOOTHS
•
PARTS WASHERS
•
DUST COLLECTORS
•
HEAT and AIR SYSTEMS

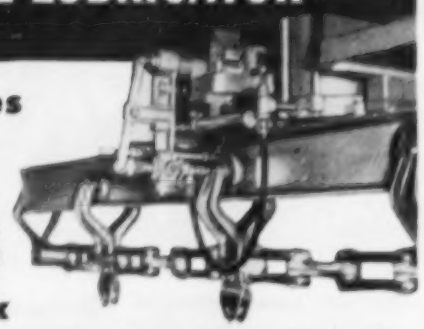
ESTABLISHED 1912
• DETROIT DIVISION
• GRAND RAPIDS DIVISION
• NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St., Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN - 2880

NEW! ALEMITE AUTOMATIC CONVEYOR TROLLEY WHEEL LUBRICATOR

Lubricates every wheel on both sides of the track



without stopping the line!

- No lubrication downtime
- Requires no floor space
- Reduces work spoilage
- Eliminates lubrication hazards
- Serves 3", 4", and 6" wheels at speeds up to 75 ft. per minute
- Fits right into existing line
- Lubricates over four miles of wheels on one filling

goes to work at the flip of a switch!

Write for full details

ALEMITE

Dept. K-34, 1850 Diversey Parkway
Chicago 14, Illinois

A DIVISION OF SW

If you write maker identify as IEN - 2881

ACCURATE TACHOMETER and Vibration Indicator

Check vibration and R.P.M. on:

AIR TOOLS
GRINDING MACHINES
BINS, HOPPERS, FEEDERS
HIGH SPEED MOTORS

Reveals vibration where undesirable, shows dead spots where vibration is needed.

VIBRA-TAK in Leather Pocket Carrying Case

A valuable tool you will want to carry with you. Easy to operate by moving tuning slide to get accurate scale reading of vibration cycles per minute or shaft speed in R.P.M. The Vibra-Tak has a range of 2,000 to 15,000 C.P.M. Just place bullet nose against vibrating object, adjust tuning slide to point where wire reed reaches maximum "throw" and read the accurate scale.

ONLY $5.00

Just the price of a fountain pen. Leather pocket carrying case. Print name and address clearly and enclose check or money order. Your Vibra-Tak quickly shipped prepaid.

MARTIN ENGINEERING COMPANY
Kewanee 2, Illinois

If you write maker identify as IEN - 2882

NOW BETTER BIGGER SMALL PARTS INSPECTION

A 1001 products from pen points to fine fabrics, dies, casts and molds to intricate surface detail quickly inspected with the

'MICROCARD READER'

EASY TO CARRY— SET UP ANYWHERE

Here's the new, economical method of "pin point" accuracy in inspection of small parts and products. Control your quality by instantly magnifying the smallest part 23 times for accurate, detailed inspection. The Microcard READER is the low cost way to higher quality for you. WRITE TODAY FOR COMPLETE INFORMATION ON "INSPECTION APPLICATIONS" IN YOUR INDUSTRY.

THE MICROCARD CORP.
READER DIVISION

Box 314D
LA CROSSE, WIS.

If you write maker identify as IEN - 2883

TIMING . . Interval unit closes and opens control circuit

Source: MASCO ENGINEERING
2119 S. Sepulveda, Dept. IEN, Los Angeles 25, Calif.

Starts by pressing button

An interval is set on this new Model-437 reset timer in any desired amount to a maximum of 150 seconds. Then a button on top of the dial is pressed to start a cycle. A synchronous motor drives the mechanism to open the contacts at the end of the preset interval. The contacts remain open until another cycle is started by again pushing the start button. Setting for the interval will remain fixed for repeated cycles until the dial pointer is placed at a new interval setting.

The contacts rate 20 amp. on 110-volt ac. Face plate dimensions are 4¼ by 4¼ inches. Overall depth is 3½ inches. Contact action combines snap and rubbing movement. Wiring is to a terminal block carrying No. 8-32 screws. Nominally closed rather than open contacts can be specified.

If you write maker identify as IEN - 2884

VALVE . . Hydraulic unloader diverts pump delivery to return line

Source: WATERMAN ENGINEERING CO.
725 Custer Ave., Dept. IEN, Evanston, Ill.

Rates to 30 gpm.

Two sizes are available in the company's new unloading valve. One takes ⅜-in. and the other ¾-in. pipe thread connections. Pressure range, for both, is minimum at 500 or 1,500 lb. and maximum at 1,500 or 3,000 pounds. The point of unloading can be set by turning an adjusting screw in the top of the cylindrical column.

Reloading pressure is approximately 80 per cent of unloading pressure at any point in the adjustment range. The valves measure 3 and 3¼ in. in face-to-face dimension. They are 8¼ and 8½ in. in overall height. Construction includes hardened and ground poppets and seats. No external drain line is required.

If you write maker identify as IEN - 2885

New field service has been set up by Cyclone Blow Pipe Co., 2552 W. 21st St., Dept. IEN, Chicago 8, Ill., to assist manufacturers with problems of drawing off chemical and paint fumes, dust control and worker comfort at operating equipment. The company is prepared to survey a plant and supply correct ventilating equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2886

TEST THEM FREE!

SEND FOR YOUR SAMPLE KIT OF

SHAKEPROOF
T.M. REG. U.S. PAT. OFF.
LOCK WASHERS

Only SHAKEPROOF Lock Washers give you the powerful, positive locking action of tapered-twisted teeth. They actually bite deeper as vibration increases! A complete line of standard types and sizes meets nearly every fastening need.

WRITE FOR FREE SAMPLE KIT TODAY

SHAKEPROOF
"Fastening Headquarters"
DIVISION OF ILLINOIS TOOL WORKS
St. Charles Road, Elgin, Illinois
Offices in principal cities

If you write maker identify as IEN - 2887

HOW TO
SLASH RIVETING COSTS

SPECIAL ENGINEERING SERVICE with our riveting know-how is yours for the asking. Send us sample assemblies and prints if possible with loose rivets, pins, studs or bushings. In one week, we'll return your assembly properly riveted with full production data and a complete quotation. No cost or obligation.

HOW WE DO IT—To speed production and cut assembly costs for you we'll: 1) locate riveting holes, 2) specify proper rivet sizes and lengths, 3) allow exactly enough stock for filling and heading and 4) check clearances. Our special know-how has saved time and materials, cut spoilage and stepped up production riveting for thousands of manufacturers. We can help you, too!

HIGH SPEED COLD RIVETER Model 2AHD. Available in 10 sizes for cold head rivets from 1/64" to 2" diameter. Performs 16 other metal working operations. Motor driven.

WRITE FOR FREE ILLUSTRATED LITERATURE

HIGH SPEED HAMMER CO., INC.
316 No. Norton St., Rochester 21, New York

Manufacturers of HIGH SPEED Cold Riveters, Staking Machines, Wire Strippers, and Precision Drilling Machines.

If you write maker identify as IEN - 2888

AJUSTRITE
TRADE MARK

AUTOMATIC ADJUSTABLE CHAIRS and STOOLS

RSC Models

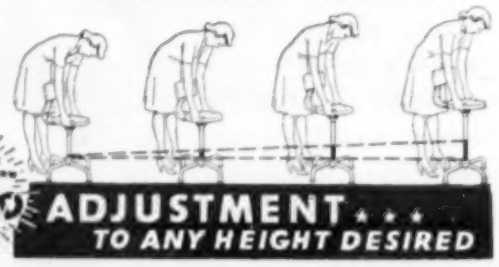
Size and style to fit every need.

Tops in factory, laboratory and school seating. Many leading industries have standardized on Ajustrite. Saves confusion among employees and eliminates maintenance. Has many advantages, high quality, no other like it. Try it in your shop for *30 days*. Full information on request.

TSS Model

AJUSTO EQUIPMENT COMPANY
2146 Madison Ave. Toledo 2, Ohio

Adjusts
15" to 20"
18" to 26"
24" to 35"

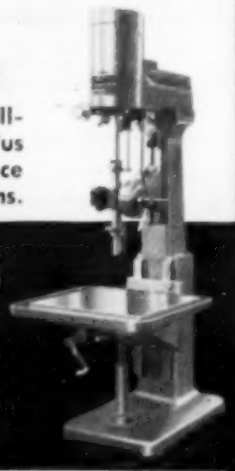


If you write maker identify as IEN - 2889

EDLUND

Applied Experience To Save You Money

EDLUND'S complete line of drilling and tapping machines plus years of engineering experience will solve your drilling problems.



EDLUND MS Motor Spindle—motor coupled directly to spindle for no-belt drive.

EDLUND B Vertical Motor Cone-Pulley Drive—proved design, rugged construction for low-cost, fast production.

EDLUND 2F Variable Speed—infinitely variable speeds assure production increases of 25% or more.

EDLUND Cam Feed Units—vertical, angular and horizontal drilling to meet unusual production problems.

Write for Bulletin G 53. **EDLUND** Machinery Co.
Cortland, N.Y., U.S.A.

Affiliated with Precision Castings Co., Inc., Division Bradley Edlund Corp.
Dealer Representation in Major Cities

If you write maker identify as IEN - 2890

MODERNIZE WITH TRIPLETT METERS

A SIZE, TYPE, AND STYLE FOR EVERY INSTALLATION

Your instrumentation is strictly modern in design and construction with Triplett Meters. You can have sizes 2" to 7" in a wide variety of case shapes and mounting arrangements, A.C., D.C., R.F., Rectifier or Dynamometer. Molded and metal cases, rear illumination, and other special features are available. For precision and economy virtually every meter part is made in Triplett plants under rigid humidity and dust control. Every meter represents the refinements gained in half a century of meter experience. Keep *your* panels up-to-the-minute with Triplett Meters—famous the world over for quality, accuracy, and dependability.

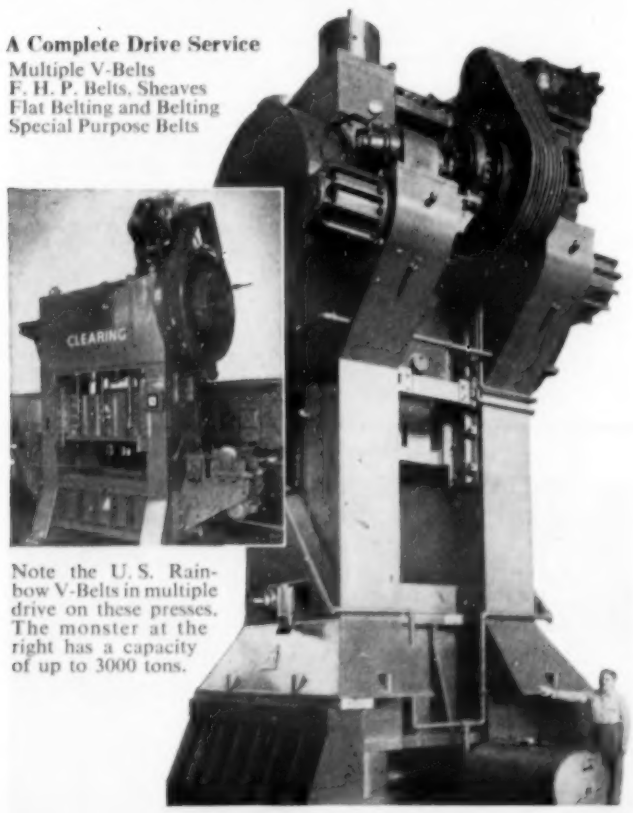
Triplett Electrical Instrument Co.
Bluffton, Ohio, U.S.A.

TRIPLETT

If you write maker identify as IEN - 2891

Controlling the punch of mighty heavyweights...with U.S. Rainbow® V-Belts

A Complete Drive Service
Multiple V-Belts
F. H. P. Belts, Sheaves
Flat Belting and Belting
Special Purpose Belts



Note the U. S. Rainbow V-Belts in multiple drive on these presses. The monster at the right has a capacity of up to 3000 tons.

These powerful presses, used for forming steel, exert tremendous forces. The V-Belts that transmit this power must be capable of handling great shock loads. The belts designed by United States Rubber Company for these presses have the right stretch and dependability for the job. Each belt has the unique Equa-Tensil Cord Section that scientifically distributes the load to insure efficient pull with minimum stretch. Protective jackets increase the grip while keeping out dirt and prolonging wear. For large or small drives, you can depend on the quality of U. S. Rainbow V-Belts. Order from your jobber or contact any of the 25 "U. S." District Sales Offices, or write to address below.

"U.S." Research perfects it
"U.S." Production builds it
U.S. Industry depends on it.

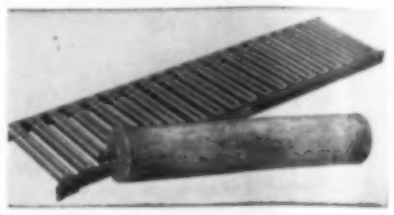
U.S. RUBBER

UNITED STATES RUBBER COMPANY
Mechanical Goods Division • Rockefeller Center, New York 20, N. Y.
Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe & Fittings • Molded & Extruded Rubber & Plastic Products • Protective Linings & Coatings • Grinding Wheels • Packings • Tapes • Conductive Rubber • Adhesives • Roll Coverings • Mats & Matting

If you write maker identify as IEN - 2893

CONVEYING . . Roll type sections employ nylon bearings in coated rolls

Source: METZGAR COMPANY
417 Douglas St., Dept. IEN, Grand Rapids 4, Mich.



Patent applied for

New combination of steel rolls, with zinc-grip coating, and nylon bearings, turning on stainless steel axles, features the construction of this new Nylo-Roll conveyor section. It is available in 11½ to 24-in. widths and in specified length. The rolls are 2 in. in diameter and the assembly can be specified for gravity or motor driven design as required.

Tests indicate that the conveyor can operate successfully in cleaning solutions at boiling temperatures and in 65 per cent salt brine solutions without damage to the rollers, bearings or axles.

If you write maker identify as IEN - 2894

TESTING . . Hot wire anemometer for flow fluctuation measurements

Source: AERO-RESEARCH INSTRUMENT CO.
1901 N. Hermitage Ave., Dept. IEN, Chicago 22, Ill.

Technical data upon request

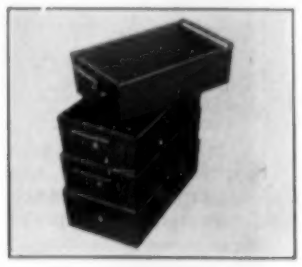
Two basic types, constant temperature and constant current, are available in the company's new hot wire anemometer. The equipment includes a power supply, amplifer, probe, bridge and connecting cable to actuate a standard cathode ray oscilloscope or oscillograph, a wave analyzer, vacuum tube voltmeter and a potentiometer in the event that a thermocouple is incorporated in the hot wire. Constant temperature amplifiers, with dc. or ac. amplification, and constant current amplifier, with ac. amplification, are available.

Several types of probes can be supplied depending on the required frequency response, the temperature range, wire strength and the function being measured. The company has prepared technical data covering the elements making up an installation. These data are available upon request.

If you write maker identify as IEN - 2895

HANDLING . . Steel tote box, stacking design, made in two sizes

Source: INDUSTRIAL BENCH & EQUIPMENT MFG. CO.
98 South St., Dept. IEN, New Britain, Conn.



Carried in stock

The welded body of this new box is shaped and fitted with lips for stacking. It carries handles welded in place at the two ends. The handles are perforated for a towing hook. Drop handles can be specified. Type D-2 measures 20 by 12 by 6 in. and weighs 13 pounds. Type D-4 measures 16 by 10 by 5 in. and weighs 11 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2896

Check Surface Roughness Waviness and Lay INSTANTLY . . . Right At The Machine

With ACME'S ROUGHNESS COMPARISON SPECIMENS

Consists of various surface specimens, *individually finished* to definite micro-inch readings, grouped together in one handy comparison bar. Merely hold bar opposite work for fast, visual comparison check of surface roughness, waviness and lay.

Available in groups of 3, 5 and 8 specimens. Low cost. Write for details, now!

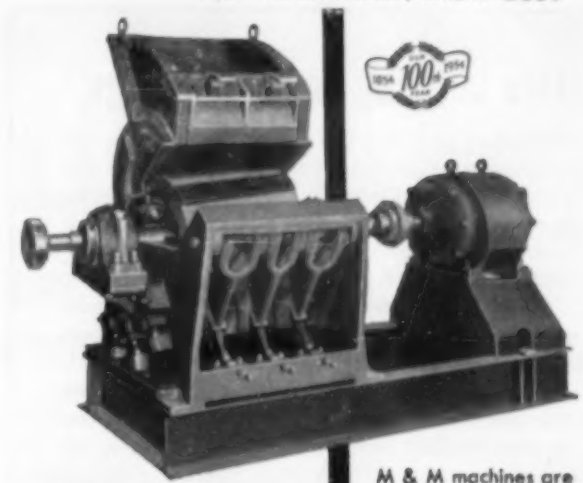
Mfr's. of Drill Jig & Fixture Bushings

ACME INDUSTRIAL COMPANY

215 N. Laflin St. Chicago 7, Illinois

THE SERVICE SHOP TO INDUSTRY FOR OVER A QUARTER CENTURY

If you write maker identify as IEN - 2897



M&M HOGGING MACHINES

M & M machines are built in many types and sizes for hogging wood, paper, plastics, rubber, meat, bones into uniform size for easy disposal or further processing into valuable by-products. Write for illustrated specification catalog.

78

MITTS & MERRILL
1014 SOUTH WATER • SAGINAW, MICHIGAN

If you write maker identify as IEN - 2898

Here's a Way to Cut Contact Costs

Yet Maintain High Performance Quality ...USE GENERAL PLATE Composite Contacts

Illustrated are typical fabricated composite contacts and assemblies accurately manufactured to customers' specifications by General Plate from General Plate Composite contact material.

As pioneer manufacturers of composite strip, overlay, edgelay and Top-Lay contact metals, you are assured of the highest quality raw materials. Add to this the know-how of fabrication of these composite metals and you are assured of contacts that give you positive performance and long life.

In addition, by letting General Plate fabricate your complete contact assemblies, you will save money, time and trouble . . . needless equipment cost and problems of scrap disposal are eliminated . . . contacts and/or contact assemblies made to your exact specifications are shipped to you ready for installation.

General Plate Palladium or Palladium Alloy Rivets, solid or composite, offer high resistance to tarnish and corrosion coupled with low and uniform contact resistance over long periods of time.

When made as a composite rivet or part — palladium bonded to a base metal — they reduce costs because they permit the use of a minimum amount of noble metal. The palladium provides the necessary contact surface, the base metal reduces costs.

Write for complete information and catalog PR700.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
73 FOREST ST., ATTLEBORO, MASS.

If you write maker identify as IEN - 2899

JOHNSON wide-rehandling clamshell

EASY-CLOSING
big-diameter sheaves, with sealed-in needle bearings, reduce friction losses, deliver full power to cutting lips. Light weight, sturdy bucket assures big payload performance in loose materials.

ALL-WELDED
smooth, fast cleaning. Hard manganese cutting edge welded to lips toughens with use. 10 Wide Rehandling sizes: ⅜ - ½ - ¾ - 1 - 1¼ - 1½ - 1¾ - 2 - 2½ and 3 cu. yds.

Other Johnson types: General-Purpose and Heavy-Duty Digging.

MAIL TODAY

to: C. S. JOHNSON Co. CHAMPAIGN, ILLINOIS (Koehring Subsidiary)
Send complete facts on .....-cu. yd. Wide-Rehandling Clamshell Bucket.
NAME _____
COMPANY _____
STREET _____
CITY, STATE _____ 4249 IEN

If you write maker identify as IEN - 2900

This Building is now "Of Age"

Twenty-one years ago, this Armco Steel Building was first erected on another industrial site. In 1937, it was completely dismantled and re-erected at this present location. There was no loss of material. Maintenance costs? An occasional coat of paint. And it will continue to give excellent service for many more years.

Armco Steel Buildings work well in many industrial applications — warehouses, shops, tool sheds, offices and garages. Erection is easy, fast and economical. Wide range of sizes helps you meet any floor space requirement. Write us for specific recommendations on your building problems.

ARMCO DRAINAGE & METAL PRODUCTS, INC.
2034 Curtis Street • Middletown, Ohio

If you write maker identify as IEN - 2901

MOSINEE "TURN-TOWLS will save us many dollars"

So says the Purchasing Agent of a Rochester, N. Y. manufacturer after using MOSINEE Turn-Towl "Controlled Type" Cabinets 8 months. And he adds this comment about the Turn-Towls themselves:

"The drying qualities of MOSINEE towels are such that one towel will do the job where it used to take 2 or 3 of the towels we formerly used."

For efficiency, install MOSINEE "Controlled-Type" Cabinets and Mosinee towels in every washroom . . . they cut towel waste and satisfy all.

MOSINEE Sulphate Towels
BAY WEST PAPER CO.
1114 West Mason Street
GREEN BAY • WISCONSIN
Division of Mosinee Paper Mills Co.

MOSINEE *means better towel service at less cost.*

Send for SAMPLE TOWELS and data on MOSINEE Controlled Cabinets

If you write maker identify as IEN - 2902

The Product Engineer CAN HELP *Keep Business Booming*

SYNCHRON®
TIMING MOTORS

help the engineer by delivering dependable, lower-cost performance in a wide variety of timing mechanisms.

HERE'S WHY: They're versatile, compact, powerful . . . operate in any position at temperatures from −40° to +140° F. Our engineers will help with special applications. Mail coupon for catalog, engineering data.

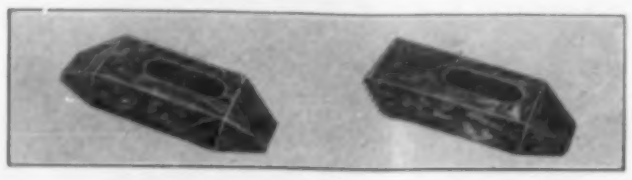
HANSEN MANUFACTURING CO., INC., PRINCETON 2, INDIANA
Send catalog and engineering data to:

Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

If you write maker identify as IEN - 2903

CLAMP . . Plain and step design to hold tools or work on a machine

Source: NORTHWESTERN TOOL AND ENGINEERING CO.
124 Hollier Ave., Dept. IEN, Dayton 3, Ohio



Detail specifications upon request

The company announces extension of its line of strap clamps, previously described IEN-5569-53, to include 22 sizes. The range has been checked to find that it will take care of most of the clamping operations on punch presses, milling machines, jig borers and other metal and woodworking machinery. The new units are beveled at the nose for cutter clearance and are furnished in plain and step designs as shown in the illustration.

If you write maker identify as IEN - 2904

MELTING . . Furnace for lead, three sizes, operates on bottled gas

Source: MET SALES & MFG. CO.
R. R. 6, Dept. IEN, Rockford, Ill.

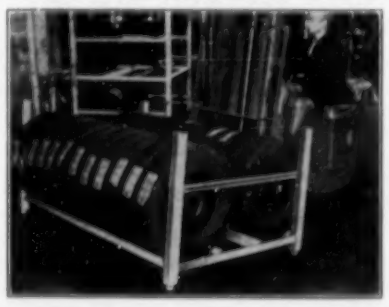
Lights instantly

Model C, for cable splicers, and Model P, for plumbers, are new designs in the company's line of lead melting furnaces previously described IEN-10990-49. Model C is a low pressure high heat furnace to operate with a pressure regulator at 5 to 45 pounds.

Model P employs a high pressure blast burner and can develop temperature to 2,350 deg. F. Three capacities are 5, 11 and 20 pounds. Both assemblies are equipped with control valves that are approved by Underwriters' Laboratories.

If you write maker identify as IEN - 2905

By doubling the width of its standard load carrying rack, Equipment Mfg., Inc., 21550 Hoover Road, Dept. IEN, Detroit 5, Mich., has economized on the use of racks in truck operations. The double width units are employed for loads greater in bulk than in weight such as the tires shown in the illustration. The racks themselves are the company's standard construction, square to permit stacking.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2906

MILL-ROSE Twisted Wire Brushes offer a better way!

These twisted wire brushes are only a few of dozens MILL-ROSE has specially designed. If our catalog of 56 standard double and single spiral brushes does not include the brush you need — we'll design one for you. Write for Catalog EN-54

HIGH PRECISION **MILL-ROSE** INDUSTRIAL BRUSHES

THE MILL-ROSE CO.
1985 East 59th Street
Cleveland 3, Ohio

If you write maker identify as IEN - 2907

kdi

Send YOUR *AUTOMATION PROBLEMS* to KRAUS

No matter how tough they are . . . give us a chance to solve your automation problems. Highly skilled engineers adapt Kraus Hoppers to your needs . . . and build completely coordinated assembly machines to fabricate your product. We won't work miracles, but we may solve the impossible. Send your automation problems today to

KRAUS DESIGN, Inc.
948 Exchange Street
Rochester 8, N. Y.

If you write maker identify as IEN - 2908

A.C.M.I. BORESCOPES

for close-up visual inspection of internal surfaces and hidden parts

A.C.M.I. Borescopes are available in 4 angles of vision (as above)—in diameters of .120" to 4.00" —in lengths of 4" to 720". Special models for special problems.

A.C.M.I. Borescopes permit close-up visual examination of interior areas and surfaces not otherwise visible. They save time and money, and prevent costly dismantling. • Each Borescope is a compact, self-illuminated industrial telescope of highest quality, employing a precision optical system, that produces a flat visual field. Lens systems are fully corrected for color, spherical aberrations, and coma, with all lens surfaces coated to increase light transmission.

Write for free informational folder, or tell us your problem.

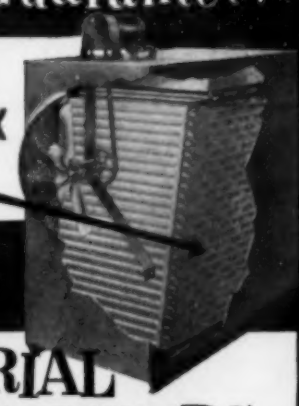
American Cystoscope Makers, Inc.
1241 LAFAYETTE AVENUE NEW YORK 59, N. Y.

If you write maker identify as IEN - 2909

ONLY HALSTEAD & MITCHELL OFFERS

20-Year Guarantee!

ON THE WETTED DECK SURFACE



HM 2 thru 100 Tons

INDUSTRIAL COOLING TOWERS

Extras in Quality . . . offered only by Halstead & Mitchell . . . the famous 20-Year Guarantee on the wetted deck surface against rotting by fungus attack . . . Stainless Steel fans and shafts . . . sheet-steel cabinets, five times protected.

Write for Literature

AT LEADING WHOLESALERS EVERYWHERE

HM *Halstead & Mitchell*
704 BESSEMER BLDG., PITTSBURGH 22, PA.

If you write maker identify as IEN - 2910

END SASH LIGHT REPLACEMENT!

Shatterproof—Crackproof Panes of Flat RESOLITE Last Indefinitely

You can install window and door lights that won't shatter when hit by flying objects; that won't crack when subjected to severe vibration, concussion or intermittant radiant heat. Translucent Resolite — a glass-fiber reinforced polyester resin—is also unaffected by weather extremes of heat, cold or moisture, and by usual industrial fumes.

That's why more and more modern plants are using Resolite for all glazing, including sidewall and skylighting.

Resolite panes are installed like glass. They are factory cut to size, but can easily be cut on the job. Resolite's uniform diffusion of daylight cuts glare, reduces eyestrain. For complete information and name of nearest distributor, write:

RESOLITE Corp., Box 514, Zelienople, Pa.

If you write maker identify as IEN - 2911

Cosden Petroleum Corporation cuts costs and corrosion with ALCOA UTILITUBE*

45,000 feet of ALCOA Aluminum Coiled Tube in instrument air service at Cosden's BTX Plant, Big Spring, Texas. Partially exposed to hydrogen sulfide gas, tubing shows no corrosion, has required no maintenance since installation in mid-1952. Installation designed and licensed by Universal Oil Products Company and built by Procon, Inc.

This company found that ALCOA UTILITUBE* is the lowest cost corrosion-resistant tube you can buy—*up to 40 per cent less than other corrosion-resistant metals.* It gives you three times more feet per pound. It is easier to form, flare and bend than annealed copper. It will not gum, sludge or discolor the fluids it carries.

Alcoa Utilitube comes in standard 50 and 100 foot lengths and in economical, long lengths up to 1,000 feet in some sizes.

Alcoa Utilitube is designed to handle fuel and lubricants in engines, air in instrument systems, fluids in hydraulic systems, cutting compounds in machine tools, etc. For complete information, write for the booklet, *Alcoa Utilitube.*

ALUMINUM COMPANY OF AMERICA
1005-C Alcoa Building, Pittsburgh 19, Pa.

*Registered Trademark, Aluminum Company of America

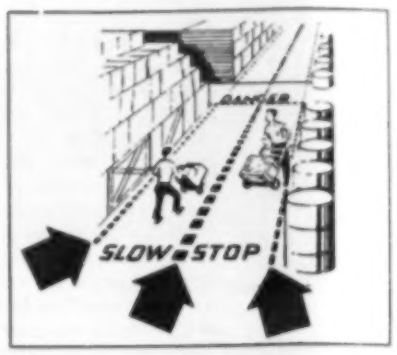
ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

If you write maker identify as IEN - 2913

MARKING . . Yellow plastic rectangles apply to form traffic lines

Source: ARMOR FLEX TRAFFIC PRODUCTS
6969 Amherst Ave., Dept. IEN, St. Louis 5, Mo.



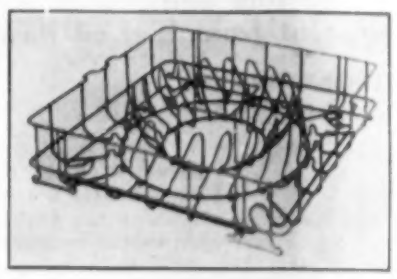
Easy to install

Armor Flex Traffic Markers are new yellow plastic rectangles measuring 3 by 6 by 0.02 inch. They apply on a floor with Marker Cement which the company supplies for this purpose. They can be laid out to include aisles, clearance lines, storage zones on wood, concrete, asphalt or composition floors. The adhesive is water and oil resistant. The rectangles are tough, long wearing plastic.

If you write maker identify as IEN - 2914

WIRE PRODUCTS . . To order, made of steel in welded assembly

Source: PEERLESS WIRE GOODS CO.
2702 Ferry St., Dept. IEN, Lafayette, Ind.



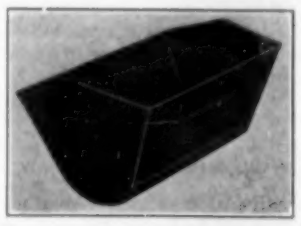
Washer rack

Grids and shelves for refrigerators, freezer baskets, dish washer racks are typical of wire products the company is prepared to make to specification in wire sizes to ½ in. in cross section. The wire employed is low carbon steel. It is assembled by resistance welding. Finish can be in zinc plating or organic or polyvinyl coatings.

If you write maker identify as IEN - 2915

CONVEYING . . Plastic bucket for application on chain elevators

Source: NATIONAL OATS CO.
1931 Baugh Ave., Dept. IEN, East St. Louis, Ill.



Will not spark

Dura-Buket is a new one-piece molded plastic conveyor bucket for which patent has been applied. It has been designed to handle materials such as grain, feed, flour, starch. It is smooth, seamless, self-cleaning and sanitary. It is non-toxic, will not corrode. Tests indicate it will outwear metal buckets in the same type of conveyor service.

Dimensions are 7 by 4 inches. List price is $1.65. Additional sizes are being developed and will be ready shortly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2916

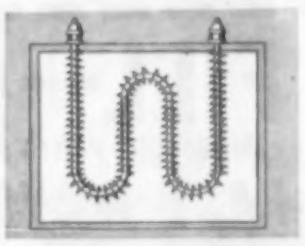
Wickwire rope slings are offered in both braided and single part construction to meet a wide variety of service requirements.

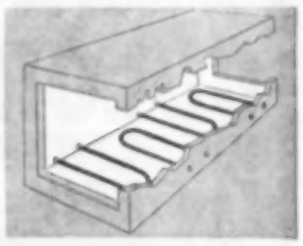
For additional information write to Wire Rope sales office, Palmer, Mass.

WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

2015

If you write maker identify as IEN - 2917





Heat process air accurately, uniformly with G-E Calrod* heaters

For process air heating—in curing, ripening, or drying rooms—specify long-life Calrod fin or tubular heaters to get:

Uniformity—thermostatic controls assure you of accurate temperatures.

Adaptability—heaters can be formed to almost any shape to match your job.

Cleanliness—no smoke or fumes contaminate air and endanger product quality.

For more information, see your G-E Apparatus Representative or Distributor. And write now for—

FREE APPLICATION BULLETINS

GEA-5096—"Heating Process Air with Electric Heat"
GEA-5685—"Calrod Heater Selector Guide"

Sect. 720-111, General Electric Co., Schenectady 5, New York.

*Reg. Trade-mark of General Electric Co.

GENERAL ELECTRIC

If you write maker identify as IEN - 2918

New "off-the-shelf" availability is now brought to roller chain drives. Taper-Lock bushings are available in sizes for most needs—no more boring sprockets to fit shafts. No turning and grinding of shaft necessary—Taper-Lock grips with firmness of a shrunk-on fit. Dodge roller chain is made to highest quality standards.

Complete range of B-type steel sprockets and roller chain available from stock — ½" to 1¼" pitch. For details write for Bulletin A-624.

DODGE MFG. CORPORATION
600 Union Street, Mishawaka, Ind.

– and Dodge Roller Chain

DODGE
of Mishawaka, Ind.

If you write maker identify as IEN - 2919

with Twin Disc HYDRO-SHEAVE® Drives

In thousands of diversified applications the HYDRO-SHEAVE Drive, slipped on the end of motor shaft, permits *smoother* acceleration —*eliminates* motor stalls and burnouts. Sizes for motors and engines from ¾ to 50 hp.

Only HYDRO-SHEAVE Drives provide exclusive *Double-Circuit* fluid coupling design for full torque output, maximum shock absorption, less overall diameter with greater capacity.

TWIN DISC

TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Kenosha, Wisconsin
BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

If you write maker identify as IEN - 2920

COLOR FILL—
STAMPED, DIE CAST, EMBOSSED PARTS

The NEW---FAST WAY
The ACROPRINTER REG. U. S. PAT. OFF.

PICKS UP COLOR ENAMELS OR COLOR INKS AND WITH A SPECIAL ACROPRENE DIE, APPLIES THE FILLING INTO DEPRESSED SURFACES.

MADE BY THE MAKERS OF MARKING AND NUMBERING MACHINES, NAME PLATE STAMPING MACHINES, ETC.

ACROMARK
ELIZABETH, N. J.
7 MORRELL STREET
"THE ORIGINAL MARKING SPECIALISTS"

If you write maker identify as IEN - 2921

Get these BULLETINS...

Learn how these

RAYMOND

HYDRAULIC TRUCKS & TABLES can cut costs, save time in your plant. Fill in and mail the coupon below for bulletins now!

Lightweight **PALLET LIFT TRUCK**
Watch one man handle 2,000 lb. loads with this *Raymond* Pallet Truck! Hydraulic power does heavy lifting. Separate pedals for lifting and lowering—270° turning radius.

Heavy Duty **PALLET LIFT TRUCK**

SKID LIFT TRUCK
Handle heaviest loads with ease with this rugged *Raymond* Truck! It's fully hydraulic, has exclusive finger-tip lowering, 360° turning radius. 4,000 or 6,000 lb. capacities.

Put this *Raymond* Truck to work handling skid loads! It's hydraulically operated, has exclusive finger-tip lowering, 360° turning radius. 2,500; 4,000 or 6,000 lb. capacities.

SHEET & STRIP FEEDING TABLE
Feed sheets faster at presses, cutting machines, forming equipment with this *Raymond* Table. Keeps material at correct working level. 2,000 to 20,000 lb. capacities.

Portable **ELEVATING TABLE**
Use this *Raymond* Table for die handling, sheet feeding, work positioning or loading! Features 30" square top, 2,000 lb. capacity. Standard Model elevates from 28" to 44"—Telescopic Model, from 28" to 50".

HIGH LIFT TRUCK
Pick this *Raymond* Truck if you do die handling, loading, work positioning, ceiling maintenance!
It's a lift truck and tiering truck combined. Hand or electrically-driven hydraulic power unit, 60" or 108" elevated height. 1,000 lb. capacity.

GET THE FACTS

The RAYMOND CORPORATION
3512 Madison St., Greene, N.Y.

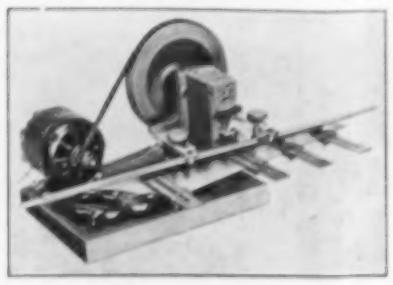
Please send me Bulletins describing: ☐ 2,000 lb. Pallet Truck; ☐ 4,000 lb. Pallet Truck; ☐ Skid Truck; ☐ Portable Elevating Table; ☐ Sheet & Strip Feeding Table; ☐ High Lift Truck.

NAME_____ TITLE_____
COMPANY_____
STREET_____
CITY_____ STATE_____

If you write maker identify as IEN - 2923

NOTCHING . . Motor driven machine cuts hand saw teeth prior to filing

Source: FOLEY MFG. CO.
3300 Fifth St. N. E., Dept. IEN, Minneapolis 18, Minn.



Bulletin Model 32000

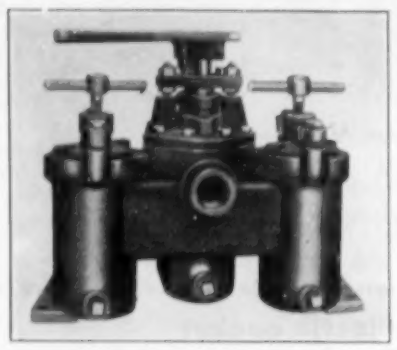
Old teeth are punched off and new ones, either rip or cross cut, are notched into the blade of a hand saw with this new Model 32000 automatic feed notching machine. Teeth measuring 4 to 16 points per inch can be cut without removing the saw handle in most cases. In addition to the motor driven assembly illustrated, the Retoother is available with hand drive.

The saw is clamped in a carrier supplied by the company and a feed bar is snapped into position. This bar is removed after the retoothing operation has been completed and the saw blade, still held in the carrier, is positioned in the companion saw filing machine to complete the retoothing and sharpening operation. The motor-driven assembly lists at $160. The machine without the motor equipment lists at $137.

If you write maker identify as IEN - 2924

SEPARATING . . Pipe line unit takes entrainment from fuel oil flow

Source: ECLIPSE FUEL ENGINEERING CO.
1002 Buchanan St., Dept. IEN, Rockford, Ill.



For clean oil delivery

Illustrated is duplex design of a new oil separator developed by the company particularly for use with its Type-CF closed flame gas oil burner. The new unit, also available in simplex design, is suited for pressure to 250 lb. per sq. in. and is approved by Underwriters' Laboratories, Inc. for pressure to 125 lb. on fuel oil.

Strainer and filter elements are interchangeable for coarse or fine separation. A yoke type holder assists in application and removal of the elements. Both types of separator are fitted with adjustable position collars to locate and seat a hand lapped rotor. Gland adjustments can be made without disturbing the rotor clearance settings.

If you write maker identify as IEN - 2925

Plans for construction of a vibration free laboratory balance table are contained in a new Bulletin FS-240, on request to Fisher Scientific Co., 717 Forbes St., Dept. IEN, Pittsburgh 19, Pa. The bulletin outlines the seven basic steps and, on its inside spread, presents a mechanical drawing that shows construction and installation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2926

With its hundreds of flying cutters, the TENNANT Model "K" literally pulverizes incrusted grime . . . and picks it up, too! The job is done in one *fast, easy,* one-man operation. The powerful Model "K" gets in close to machinery . . . works fine in crowded aisles . . . doesn't interfere with production . . . cleans 6 to 20 times faster than hand labor . . . leaves clean, smooth floor *ready for traffic.*

- **Cuts grime loose**
- **Smooths & levels**
- **Picks up sollage**

This 16" REVO-TOOL has 336 cutters for extra-heavy grime.

Revolving drum with REVO-TOOL or other accessories loosens and hurls heavy sollage into large hopper. Suction pulls lighter dirt up into bag.

WRITE for Bulletin 81.5

G. H. TENNANT CO.
2574 2nd St. N., Minneapolis 11, Minn.

TENNANT

If you write maker identify as IEN - 2927

Moving or Storing is Rapid, Convenient and Inexpensive with
IRONBOUND SEMI-LIVE SKID PLATFORMS

Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks . . . One of the methods that Ironbound engineers use to increase production and conserve space at low cost.

SEMI-LIVE SKID WITH BOX TOP
. . . permanently attached or removable. Also available with many other superstructures to "Short-Haul" your products thru production or into storage. Useful in hundreds of spots in every plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS
Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

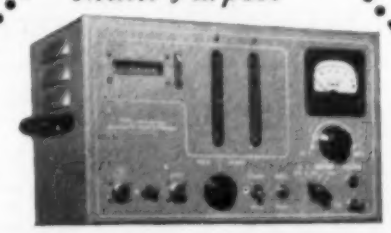
Ironbound

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN - 2928

Multi-Purpose



LABORATORY
POLI-SCALER
Versatile
Compact
Precise
Low-Cost

The Detectron DS-606 Poli-Scaler is a complete laboratory scaler of exceptional versatility. Adaptable to GM and scintillation counting and frequency checks. Power supply may be used for either GM input or to operate accessory equipment.

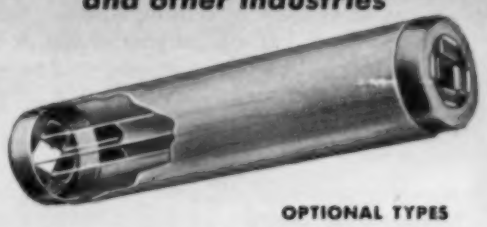
PULSE HEIGHT DISCRIMINATOR INPUT – 2 to 100 V
POSITIVE or NEGATIVE PULSES – 2-100V Pos. 2-50V Neg.
RESOLUTION TIME – 5 Microseconds per pulse pair or less
HIGH VOLTAGE POWER – Variable in 1-step from 0 to 2.5 kv.
COUNTING RATE – 1,000 per sec. max.
ACCESSORY SOCKETS –for count rate meter and speaker
DIRECT READING – to 99,999,999

Write for FREE Folder 75

THE Detectron CORPORATION
5420 VINELAND AVE., NO. HOLLYWOOD, CALIF.

If you write maker identify as IEN - 2929

WOODEN
SHELLS • ROLLS • CORES
for the
TEXTILE • RUBBER • PAPER • PLASTIC
and other industries



- *The CAP WELD SHELL shown above is designed for heavy duty rolling and offers the maximum in long-life service.*

OPTIONAL TYPES
- CAP WELD SHELLS
- MACHINE ROLLS
- LAG ROLLS
- CAPPED END SHELLS
- CAPPED SQUARE SHELLS

These cylinders are all available in standard diameters or can be supplied on order to meet your individual specifications.

CYLINDER MFG. CO.
HAWTHORNE, N. J.
ESTABLISHED 1916

Send for descriptive Brochure

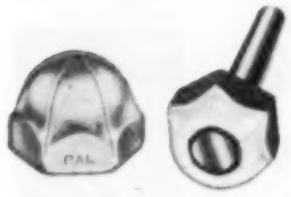
If you write maker identify as IEN - 2930

NO THREADS NEEDED!

PUSHNUTS

Trademark

Low cost—speedy assembly—hold tight

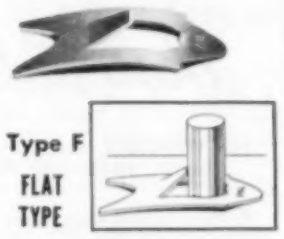


Type C **Type K**

For unthreaded Rods and Axles

Used on wheels of play vehicles; also other permanent applications.

Place PUSHNUT on rod, tap with hammer. Patented locking method resists 100 lbs. or more. Eliminates threading, notching, cotter pins. Made of heat-treated spring steel, in pleasing acorn or semi-acorn styles and various finishes, for 3/16", 1/4" and 5/16" rod.



Type F
FLAT TYPE

For unthreaded Studs and Rods

Ideal for nameplates, mouldings and other light parts.

Slips easily over stud, instantly locks with push of simple inexpensive applicator. Spring tension pulls parts snugly to base—energized grip holds tight against loosening or rattling. Choice of finishes for 3/16", 1/8" and 3/16" studs.

Write for free samples, stating size and application.

THE PALNUT COMPANY

Manufacturers of PALNUT® Lock Nuts and Fasteners
59 Cordier St., Irvington 11, N. J.
In Canada: P. L. Robertson Mfg. Co., Ltd., Milton, Ont.

If you write maker identify as IEN - 2931

This specialized Pittsburgh brush solved Wheeling Steel's cleaning problem—saved money and boosted quality as well as increased production!

Problem:

How to be tough and soft at the same time!

That was the problem presented to the Pittsburgh Plate Glass Company by the Steelcrete Division of Wheeling Steel, Beech Bottom, W. Va.—and it required a specialized Pittsburgh brush to solve it!

Large sheets of expanded metal had to be cleaned without impairing the surface texture, yet the brush had to cut through tough scale and remove burrs. A special steel wire was chosen, made up into brushes, and applied to the problem. Result? Combining the right amounts of toughness AND softness, the brush completely eliminated burrs in a matter of minutes, leaving the face of the metal unharmed. Moreover, cleaning is quicker and costs less than with other brushes!

WRITE TODAY for your free copy of our new booklet that shows, thru actual case histories, how Pittsburgh can help cut *your* brushing costs. Address: Pittsburgh Plate Glass Company, *Brush Div.*, Dept. W-16, 3221 Frederick Ave., Baltimore 29, Md.

PITTSBURGH *Power Driven* **BRUSHES**

BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS • FIBER GLASS

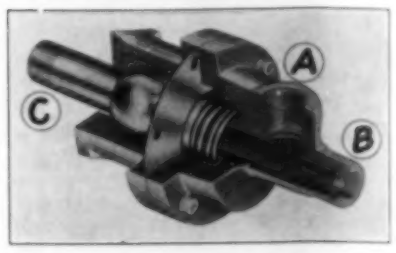
PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

If you write maker identify as IEN - 2933

PIPE FITTING . . Rotary joint to make stationary-rotating connection

Source: KEY COMPANY
2651 McCasland Ave., Dept. IEN, East St. Louis, Ill.



Patent pending

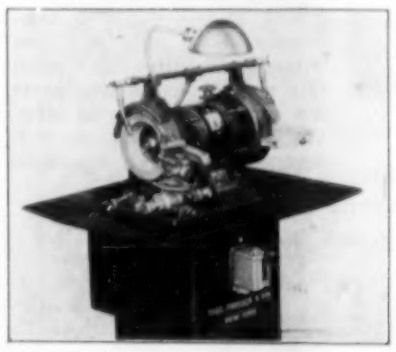
Steam or liquid connection is made at A from a stationary pipe line and the opening at B is plugged or capped for one-way flow through this Phillips rotary joint for which the company has been appointed exclusive distributor. The flow is toward the left, as the joint is shown in the illustration, to pass through the stud mounted half of a bearing socket in the main housing and from there through the opening in the hollow ball equipped stud C that threads into a unit of rotating equipment. The opposing half of the bearing socket is enclosed in the housing and is bored out sufficiently large to provide for misalignment without causing the rotating stud member to bind. The diaphragm is spring backed. It also acts as a gasket between the housing parts.

The Thru-Flo Type TF joint, just described, can be modified by opening the connection at B and inserting a syphon tube into the internal threads so this tube extends through the rotating stud into the equipment being served. Installation is completed by a pipe connection on the male threads to provide for return flow through the tube in a Type-S syphon arrangement. The joint is stocked in pipe sizes from 1/4 to 3 inches. It can be made in any metal to meet requirements.

If you write maker identify as IEN - 2934

GRINDING . . Precision machine for carbide, high speed, Stellite tools

Source: THOMAS PROSSER & SON
120 Wall St., Dept. IEN, New York 5, N. Y.



Separate coolant equipment

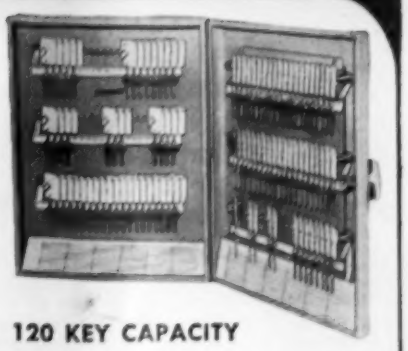
Model APW, for wet grinding, is new design of the Model-AP single point tool grinder previously described IEN-8118-53. The machine is available in both bench and floor mounting types. It is equipped with a separate motor-driven coolant pump, pan, settling tank, piping, valves, adjustable nozzles and flexible neoprene spray guards. A flow of water is maintained directly to the tool being ground. The machine takes diamond wheels 6 in. in diameter or either 6 or 7-in. vitrified wheels interchangeably.

One side of the machine mounts a quick acting index table on which tools are supported for free hand roughing on a vitrified wheel. The other side mounts the tool positioning and swing mechanism for the finish operation. Reciprocating action of the tool holder permits rocking the tool by hand back and forth across the face of the wheel to produce a mirror finish and keen cutting edges without overheating. The action also prevents localizing wear on the wheel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2935

STOP HUNTING FOR KEYS



120 KEY CAPACITY

Here's real "key insurance" in a compact KE-CABINET. Made of 20 gauge cold rolled steel with suitable hardware to provide maximum key security. Equipped with numbered KE-TAGS of durable, vulcanized fibre. KE-CABINETS come in two sizes to hold 60 to 120 keys and 100 to 200 keys. The cabinet is finished in modern office grey.

For further information write

CUSHMAN & DENISON MFG. CO.
153 West 23rd Street • New York 11, N. Y.

KE-CABINET

If you write maker identify as IEN - 2936

TO THE INGENIOUS

Not familiar with this

NEW INDUSTRIAL TOOL

Free Sample of Fullergript Brush Strip

What problems can you solve by adapting Fullergript to your equipment?

This brush strip can be coiled or twisted into numerous shapes. It can be formed to give intermittent or continuous brushing action. It adapts to stationary or power driven applications. How it may help *you* is a matter of your own ingenuity — plus the services of the Fuller Brush Engineering Dept. Find out what Fullergript can do by sending for a sample strip. We will also send a booklet showing its versatility. Simply write today.

Lower cost finishing with quality control for laminated plastic panels . . . because Fullergript made possible a brushing action leading to economies in other processes.

INDUSTRIAL **Fuller** BRUSH CO. DIVISION

3583 MAIN STREET • HARTFORD 2, CONN.

Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

If you write maker identify as IEN - 2937

FOR ACCURATE CONTROL OF AIR

MASONEILAN No. 71 Reducing Valve

Built to maintain accurate control of air pressures under the toughest conditions, this sturdy reducing valve is a real money saver. Compact. Easy to service. It has large capacity . . . instant response. Its simple design and sturdy construction reduces maintenance to a minimum.

Initial pressure up to 250 lbs., reduced to any pressure from 5-60 lbs., 60-100 lbs. Sizes 1/4" to 1/2". Pressure gauge included.

Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN
REGULATOR CO.
1188 ADAMS STREET, BOSTON 24, MASS., U. S. A.

If you write maker identify as IEN - 2938

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line . . . provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin #65-5.

Send for **illustrated descriptive bulletin and detailed information**

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 2939

ELASTIC STOP NUT CORPORATION OF AMERICA
Dept. R17-353, 2330 Vauxhall Road, Union, N. J.

Please send me free design information on

ROLLPIN
TRADE MARK

. . . the slotted tubular steel pin with chamfered ends used for production economies in replacing

- ☐ a rivet
- ☐ a set screw
- ☐ a hinge pin
- ☐ a bolt and nut
- ☐ a stop pin
- ☐ a cotter pin
- ☐ a taper pin
- ☐ a dowel

NAME _____ TITLE _____
FIRM _____
STREET _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN - 2940

Check Temperatures Instantly... Accurately with Alnor TYPE 1500 PORTABLE PYROMETER

Wherever temperature readings are required—on the production line, in the laboratory or in the field—this sturdy precision instrument can bring you instant, accurate results.

Here's Why

It's Fast... in operation and quickly read. Precision movement designed to laboratory standards. Direct reading scale face is easily understood—no slide wires or conversion tables necessary.

It's Accurate . . . consistently to within ¾ of one percent under almost all variable conditions. Sturdy, protective case assures continued accuracy in toughest portable service. Ten scale ranges available, from 0-400° to 0-3000°F. Equivalent Centigrade scales available at no extra cost.

It's Portable... compact size, 6½"x6"x3", and light weight make this pyrometer highly portable and easy to use anywhere. Write today for complete details and prices. Illinois Testing Laboratories, Inc., Room 517 420 N. La Salle Street, Chicago 10, Illinois.

Send for Bulletin on 1500 Pyrometer.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 2941

Here's HAND TRUCK News!

GUARANTEE
If this AMERICAN HAND TRUCK fails in service for any reason (normal wear on rubber tread wheels or corrosive attack excluded)—within five years from date of delivery—return it freight prepaid for repair or replacement to
THE AMERICAN PULLEY COMPANY
4200 Wissahickon Ave., Philadelphia 29, Pa.
SAVE THIS CARD—IT'S YOUR GUARANTEE

AMERICAN HAND TRUCK HEADQUARTERS

ONLY AMERICAN GIVES YOU THIS GUARANTEE

Clip and Mail Coupon For Bulletin

Materials Handling by

AMERICAN PULLEY COMPANY

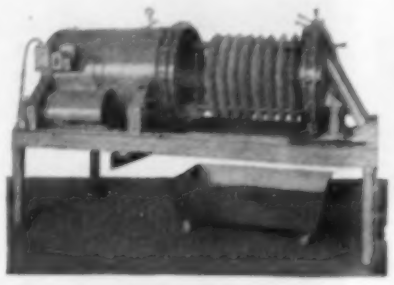
Complete line of Pressed-Steel Hand Trucks, Barrel Cradles, and Steelite Industrial Wheels.

The American Pulley Company
4240 Wissahickon Ave., Philadelphia 29, Pa.
Gentlemen:
Please send me your latest bulletin on American Hand Trucks.
Name _____
Firm Name _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 2942

FILTERING . . Plate type unit for liquids employs retractable tank

Source: SPARKLER MFG. CO.
163 W. Lake St., Dept. IEN, Mundelein, Ill.



Tank slides to left

The operator of this new Model-MCR filter can retract the tank, by releasing a lever and operating a switch, to expose the plates in about 60 seconds. The filter can be cleaned with a jet spray, by back washing, by a combination of the two, or by hand. One operator can open the assembly, clean a 2,000-lb. cake and return the filter to operation in about 30 min. without disconnecting the pipe lines.

The tank is available in steel, stainless steel or other metal. It can be rubber or plastic lined. Each assembly, including valves and pipe, is designed for specific service.

If you write maker identify as IEN - 2943

SAWING . . Portable tool attachment reciprocates blade, will pierce work

Source: SAW-MOR TOOL & BLADE CO.
520 Machinery Hall Bldg., Dept. IEN, Chicago 6, Ill.

Operator guides it

New attachment mounts on an electric or pneumatic drill, ¼ or ½ in. size, to provide a ⅞-in. stroke to the saw blade secured in the holder. The blade will pierce non-metallic work so no starting hole is required. It will cut steel, nonferrous metals, plastics. It can be employed with a file instead of a saw blade. Moving parts are made of hardened steel. The attachment employs ball bearings. Weight is 4 pounds.

If you write maker identify as IEN - 2944

Paint is removed from a brick wall, prior to application of water proofing, by a special cutter head operated by a flexible shaft machine, according to Stow Mfg. Co., 25 Shear St., Dept. IEN, Binghamton 25, N. Y. The head is driven at 1,750 rpm. by the ½-hp. machine. Work accomplished is equivalent to that of six men working by previous hand methods.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 2945

CYCLOTHERM carries entire steam load of conventional boiler *in 1/4th the space*

Walter A. Johnson, Momence (Ill.) Greenhouses, says this about his 50 hp Cyclotherm . . .

"SAVINGS IN FUEL AND MAINTENANCE WILL PAY FOR THIS BOILER IN A FEW MONTHS"

For saving space, fuel, maintenance and money, nothing equals Cyclotherm Steam or Hot Water Generators. Completely packaged units ready to operate on arrival.

Burn oil, gas or combination. Save space of conventional units. Simple flue — no brickwork. Fully automatic controls. Underwriter approved. Exclusive, patented Cyclotherm cyclonic combustion principle—*from cold start to full power in 15 minutes.* Sizes 18 to 500 hp, 15 to 200 psi. Write for free literature: Dept. 29

CYCLOTHERM® STEAM GENERATORS
CYCLOTHERM DIV. UNITED STATES RADIATOR CORP.—OSWEGO, N. Y.

If you write maker identify as IEN - 2946

Judge for Yourself

what this remarkable product can do for you in your own plant. FREE TRIAL of Money-Saving

Thermo-Cote

THE STRIPPABLE PLASTIC ARMOR FOR METAL PARTS AND PRODUCTS

Protects against costly losses due to corrosion, and abrasion of metal parts in shipping, manufacture and storage. Preserves product appearance. Permits inspection without unwrapping. Saves shipping weight, space, and wrapping cost. Economical . . . low-cost and reusable!

Write for details and a sample to test in your own plant or send your product to be Thermo-coted and returned with quotation on this manufacturing cost-saver . . . Thermo-cote.

ERNST Bischoff CO., INC.
PLASTICS DIVISION
104 Main St., Ivoryton, Conn.

Dip . . . it's on!

Slit . . . it's off!

Results of accelerated corrosion tests on mild steel panels exposed to 100% humidity at 100°F. Areas protected by THERMO-COTE were unaffected.

If you write maker identify as IEN - 2947

Write for 32 Page Catalog

- Pump Controls
- Duplex Pump Alternators
- High and Low Level Cutoffs
- High and Low Level Alarms
- Multi-Level Signals
- Liquid Metering
- Special Controls and Panels

Listed by Underwriters Laboratories

CHARLES F. WARRICK CO.
1965 W. Eleven Mile Road
Berkley, Mich.

Warrick FLOATLESS LIQUID LEVEL CONTROLS ELECTRODE TYPE

If you write maker identify as IEN - 2948

We make satisfied customers

Package your products in Lermer Plastic durable, handsome containers. They are shatterproof, 75% lighter than glass, available clear or opaque in many colors, can be printed or decorated and are available with metal or plastic closures. Write for complete catalog information and samples. If possible, send along products for particular suggestions.

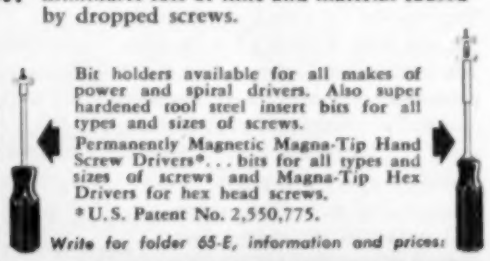
LERMER PLASTICS, INC.
Pioneers and Pacesetters in Plastic Packaging
518 South Ave., Garwood, New Jersey

If you write maker identify as **IEN - 2949**

Thousands of these MAGNA BIT HOLDERS* cut costs 4 ways

FOR POWER AND SPIRAL SCREWDRIVERS

1. *Cuts labor costs.* No hand starting, no prepositioning of screws. Bit holds screw *firmly.* High energy *permanent* magnet energizes bit with 10 times ordinary "pull".
2. *Cuts bit costs* through use of long-wearing super hard, low-cost interchangeable insert bits.
3. *Cuts bit wear* and replacement since the energized bit seats itself positively in the screw slot or recess.
4. *Eliminates* loss of time and material caused by dropped screws.



Bit holders available for all makes of power and spiral drivers. Also super hardened tool steel insert bits for all types and sizes of screws.

Permanently Magnetic Magna-Tip Hand Screw Drivers*. . . bits for all types and sizes of screws and Magna-Tip Hex Drivers for hex head screws.

*U.S. Patent No. 2,550,775.

Write for folder 65-E, information and prices:

MAGNA DRIVER CORP.
779 WASHINGTON STREET, BUFFALO 3, N. Y.

If you write maker identify as **IEN - 2950**

Platform truck design offers maximum load support and eliminates hinges, pins and bushings. Extra LOAD SUPPORT is only one of the many features found in this model... and there is no additional cost for extra LOAD SUPPORT. Trucks are available in capacities up to 10,000 lbs.

Write for Bulletin No. 53 . . . and remember . . . THERE'S A MOTO-TRUC FOR EVERY PURPOSE.

Representatives in Principal Cities

The MOTO-TRUC Co

1987 E. 59th STREET • CLEVELAND 3, OHIO

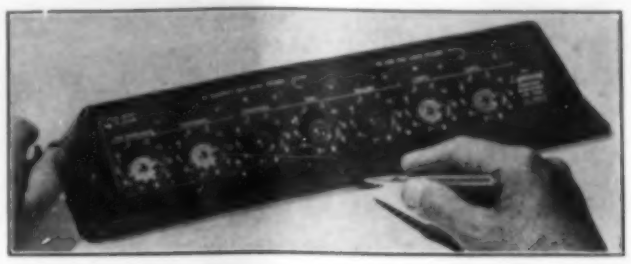
PALLET . . . PLATFORM . . . HI-LIFT TRUCKS

LARGEST EXCLUSIVE MANUFACTURERS OF "WALKIES"

If you write maker identify as **IEN - 2952**

CALCULATING . . Adding machine assembles seven stylus operated dials

Source: CENTURY SALES
Box 62, Dept. IEN, Naperville, Ill.



About $15

Lightning designates a new portable adding machine in which seven digit dials are assembled in a housing that measures 14 by 4 inches. The unit weighs 1½ pounds. Figures are dialed with a metal stylus. The total appears in a row of windows above the dials. A thumb lever is moved to clear the machine.

If you write maker identify as **IEN - 2953**

STRIPPING . . Paint remover for spray guns, tanks, rejected work

Source: BECK EQUIPMENT CO.
3350 W. 137th St., Dept. IEN, Cleveland 11, Ohio

Technical data upon request

Econostrip is a new stripping material that is reduced in solution with water on the basis of one part of each. Work pieces and assemblies are dipped into it to loosen old paint so it can be rinsed away with water or hung on a conveyor line to move through a regular degreasing operation.

The solution can be employed in a continuous production operation or from a drum. An additive is available when it has lost some of its strength due to dragout. The solution will not attack metals and does not remove a bonderized or phosphate coating.

If you write maker identify as **IEN - 2954**

PRESS . . Motor driven, 40 ton, has 24 in. throat and 2½ in. stroke

Source: WHITNEY METAL TOOL CO.
100 Forbes St., Dept. IEN, Rockford, Ill.

Welded frame

Normal operation is at 84 strokes per min. for this No. 331 new 40-ton press. It has been added to the line of similar equipment previously described IEN-1932-53. The bolster plate measures 12 by 20 by 1½ inches. Maximum die space is 9 inches. Throat height is 12 inches. Weight is about 4,000 pounds. Drive is by a 3-hp. motor belt connected at the rear of the assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2955**

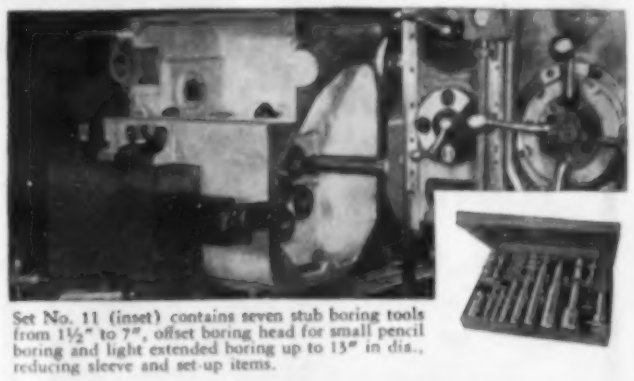
Complete records of: Areas painted; Dates; Brands used; Quantities; Costs; Durability

KNOW YOUR PAINT COSTS FREE BOOK makes it easy!

Put your industrial maintenance painting on a business-like, cost-and-performance basis. With this free, file-size, 24-page record book it's easy to have a complete history of every painting job on buildings and equipment for years to come. No more guesswork. It becomes your guide to better painting—and saving money! *Your business letterhead request brings your free copy, without obligation. Write today!*

THE TROPICAL PAINT & OIL COMPANY
1126-1288 W. 70th • Cleveland 2, Ohio
HEAVY-DUTY MAINTENANCE PAINTS SINCE 1883

If you write maker identify as **IEN - 2956**



Set No. 11 (inset) contains seven stub boring tools from 1½" to 7", offset boring head for small pencil boring and light extended boring up to 15" in dia., reducing sleeve and set-up items.

Use DAVIS "Super" Micrometer stub boring tool sets

- ✓ Adjust to within .0001".
- ✓ Rugged for heavy boring.
- ✓ Precise for fine finishes.
- ✓ 10 complete, convenient standard sets equipped with high-speed steel cutters to choose from.
- ✓ Stellite, tungsten or super high speed cutters also available.

THE handiest production boosting tool sets on the market. For use with horizontal boring, drilling and milling machines . . . vertical or horizontal boring machines . . . turret lathes . . . vertical turret lathes . . . or milling machines. Available for almost immediate delivery. Modifications in any set can be made to meet exact requirements. Write for complete details.

WHATEVER YOUR BORING PROBLEM, IF DAVIS CAN'T BORE IT — IT CAN'T BE DONE!

DAVIS BORING TOOL DIVISION
GIDDINGS AND LEWIS MACHINE TOOL COMPANY
FOND DU LAC, WISCONSIN

If you write maker identify as **IEN - 2957**

Low-cost key to fast model changes

PLASTIC JIGS, TOOLS, AND METAL-FORMING DIES

Reduction of tooling costs is a basic goal for the automotive and aircraft industries in 1954. A significant contribution to this program will come from the application of BAKELITE Epoxy Resins for metal-forming dies and fixtures.

These resins can be cast into dies without applied heat or pressure, using molds of glass, plaster, wood, or metal. Adding a special hardener converts the resin syrup into a thermosetting solid in a few hours at room temperature. Shrinkage is negligible. Minute mold details are accurately reproduced. The resulting tools are light in weight, with great impact, flexural, and compressive strengths, and excellent dimensional stability. They can be machined or patched when changes are needed.

Laminations of glass fabric and BAKELITE Epoxy Resin are readily constructed for high strength, thin-walled fixtures such as spotting die racks, checking fixtures and Keller models. These devices are accurate and tough, will not check or crack, need no edge binding.

Bakelite Company manufactures epoxy resins and their hardeners. Because of the variety of requirements and formulations, address your problems to us for proper recommendations. Write Dept. TR-14.

Illustrations by courtesy of Ren-ite Plastics, Inc., Lansing, Michigan.

BAKELITE
TRADE-MARK
EPOXY RESINS

TRADE MARK

BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.
In Canada: Bakelite Company
A Division of Union Carbide Canada Limited, Belleville, Ontario

If you write maker identify as IEN - 2959

BOSTITCH T5 TACKER

One in the hand is worth two men with hammers and tacks!

- Just about twice as fast—that's how manufacturers and contractors compare the Bostitch T5 Tacker to hammer and tacks.
- There are other big advantages. The T5 Tacker permits accurate locating of staples, even in tight spots. Drives staples to within 1/16" of corners, penetrates deep into hard or gummy woods. One-hand operation leaves other hand free for holding or aligning material. Equally important, workers like it.

Fasten it better and faster with

For more information about the Bostitch T5 Tacker and for application details, write BOSTITCH, 643 Mechanic St., Westerly, R. I.

BOSTITCH®
STAPLERS AND STAPLES

If you write maker identify as IEN - 2960

There's many a slip...
but it only takes one to cost money!

PABCO GRIP-TREAD MASTIPAVE FLOOR COVERING

Saves Money... Four Ways!
NON-SLIP, SUPER-TOUGH RESILIENT, LOW-COST

These four money-saving ways are why factories, schools, office buildings, hospitals, and Governmental institutions and others specify Pabco Grip-Tread MASTIPAVE...

❶ *Non-Slip* Grip-Tread Mastipave prevents accidents. It's the safe floor with built-in brakes.

❷ *Non-Slip* Grip-Tread Mastipave is super-tough . . . resists wear day-in and day-out. Replacement costs are at a minimum.

❸ *Non-Slip* Grip-Tread Mastipave is resilient, reduces foot fatigue, increases job efficiency.

❹ *Non-Slip* Grip-Tread Mastipave is low cost. Low-cost installation, low-cost maintenance, long wearing qualities. You can't lose—investigate today. Clip the coupon below and learn how you can show a real money value to your company.

FILL OUT THIS COUPON

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. B nearest office)

GENTLEMEN: Without cost or obligation to me, please send your folder, "Every Building needs Pabco MASTIPAVE."

NAME _____

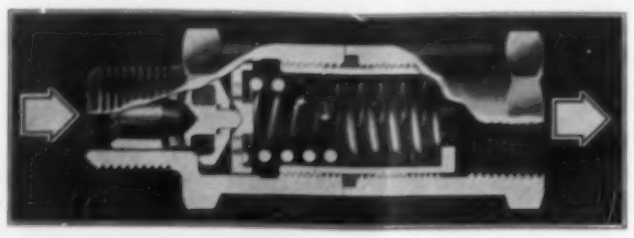
ADDRESS _____

CITY _____ STATE _____

If you write maker identify as IEN - 2962

VALVE . . Pressure relief design handles gas or liquid to 1,000 pounds

Source: JAMES-POND-CLARK
2181 E. Foothill Blvd., Dept. IEN, Pasadena 8, Calif.



Blends into a pipe line

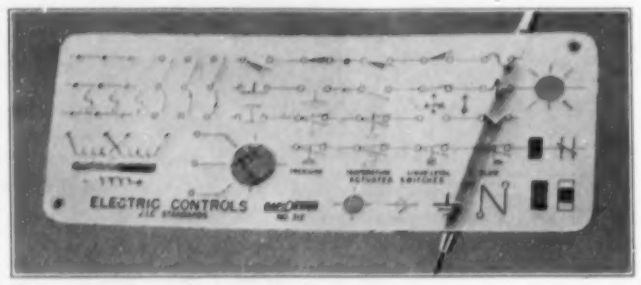
The guided disc with its O-ring seal is backed by a spring and closed in a cup retainer that threads into the body of this new Series-5100 Circle Seal pressure relief valve. Holding pressure can be increased or decreased by turning the cup in the body with the aid of an Allen wrench. Interchangeable springs can be employed for a wider range of adjustment.

The valve holds without leakage to within 2 per cent of the preset cracking pressure. It reseats, without leakage, within 5 per cent of the setting. It is available in steel or brass for pressure from 50 to 1,000 lb. and in sizes from ¼ to 1 inch. It also is available in stainless steel with suitable O-rings.

If you write maker identify as IEN - 2963

DRAFTING . . Symbol template for quick electric circuit tracing

Source: RAPIDESIGN INCORPORATED
Box 592, Dept. IEN, Glendale, Calif.



List price is $2.50

Symbols for JIC electric controls can be selected from this new No. 312 transparent plastic template and traced quickly in connection with layout of electric circuits. The template is new in the company's Timesaver line. Cutouts are precision smooth, machine milled and grouped to assist in drawing combinations of symbols most frequently appearing in sequence. Overall dimensions are 9 by 3⅜ inches.

If you write maker identify as IEN - 2964

Time signals, broadcast by United States Bureau of Standards, are employed to supervise a new master clock manufactured by International Business Machines Corp., 590 Madison Ave., Dept. IEN, New York 22, N. Y. The clock contains a short wave radio receiver that is tuned to the signals. It employs the signals, once each hour, to reset itself. The clock mechanism is spring driven and is timed by a 60-beat invar pendulum.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2965

CONTROLLED CONTACT with INSTANT MAKE and BREAK

KRISER 42A

$8.50

This heavy duty Polished Aluminum FOOT SWITCH is unparalleled for positive current control in photographic contact printing and enlarging as well as for control of small motors or other electrical circuits, and is distinguished by its sensitive, instantaneous make and break.

Special foot switches engineered to your specifications and needs.

Comes with heavy duty series plus. Capacity: 1000W-AC-120V, 150W-DC-120V.

Write for Illustrated Catalog
THE KRISER CORPORATION
154 11th Avenue • New York 11, N. Y.

If you write maker identify as IEN - 2966

SAM SPINNER SAYS:

Throughout industry AT&M centrifugals are proving how they can cut the time and reduce the expenses of older processing methods. AT&M's free booklet, "Centrifugal Force," tells you how faster, better, lower cost results are assured in such processes as: *separation . . . extraction . . . impregnation . . . coating . . . precipitation . . . draining . . . dehydration . . . thickening . . . sedimentation . . . filtration.* This 8-page, illustrated booklet may show you how to solve your own processing problems — and save time, space and money. Write for your free copy of "Centrifugal Force" to American Tool & Machine Company, 1417 Hyde Park Ave., Boston 36, Mass.

SAVE TIME, SPACE AND COSTS WITH
A.T. *and* M.
CENTRIFUGING

If you write maker identify as IEN - 2967

FREE CATALOG!

available to you who are interested in the facts on open steel flooring.

Up to the minute information on the hows and whys of construction and installation of Tri-Lok Open Steel Flooring may now be at your finger-tips. Here is a four-page catalog designed to aid you in selecting the best types and styles of open-steel flooring for your particular construction project.

IN THIS CATALOG YOU'LL FIND
- Tables of Safe Loads
- Specifications required for open steel flooring installation
- Types of Tri-Lok Open Steel Flooring available
- Information concerning construction, sizes, strength and adaptability of Tri-Lok Open Steel Flooring

FOR YOUR COPY, WRITE FOR BULLETIN PW 1102

DRAVO
CORPORATION
National Distributor for THE TRI-LOK CO.
Dravo Building, Fifth and Liberty Avenues, Pittsburgh 22, Pa.

If you write maker identify as IEN - 2968

BRUSH OR SPRAY A LIQUID METAL SHIELD WITH THE UNIQUE

Karnak®

Aluminum Asphalt coating

Gives superior protection because aluminum particles "leaf" as the asphalt base dries forming a firm metallic shield that resists weather and reflects the hot destructive sun rays.

Reduce maintenance costs . . . one coat, low cost, long life protection. One gallon covers above 250 square feet. Applies easily either brush or spray . . . ready to use, just stir in the container.

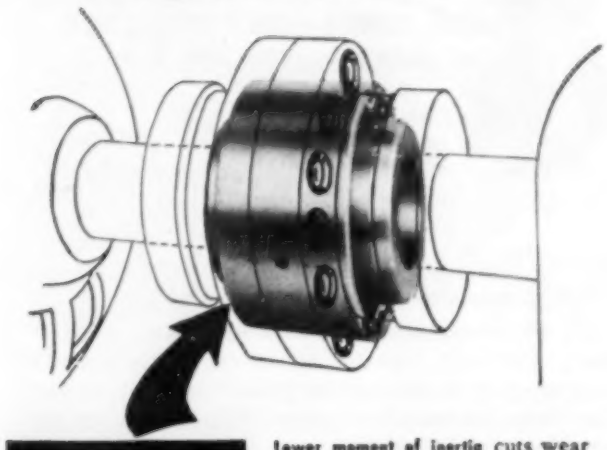
High quality formulation of Karnak Asphalt Aluminum Coating is certified by the Warranty Seal which is attached to every container. This composition of asphalt aluminum flakes and proper solvent provides the utmost in reflectivity for heat reduction and protective qualities against the destructive elements of the weather. This makes Karnak superior for roofs, metal surfaces, brick and masonry, storage tanks, tank cars, refrigerated buildings and trucks. Manufactured by the Lewis Asphalt Engineering Corporation, 30 Church Street, New York 7, N. Y.

Write for the two-minute test. Shows how the asphalt penetrates and the aluminum flakes form an opaque metallic shield that reflects and protects.

Call for **Karnak** *there is no better*

If you write maker identify as **IEN - 2969**

Eliminate Excess Weight • Size • Parts



REVOLUTIONARY Sier-Bath Flexible GEAR COUPLINGS

Lower moment of inertia cuts wear on shafts, bearings, armatures ...allows higher speeds...cuts power costs. Smaller size allows more compact designs. Simplicity slashes assembly costs, down-time. Only 7 parts . no nuts, bolts or flanges . . assembled, uncoupled in *seconds.* CATALOG on request. *Sier-Bath Gear & Pump Co., Inc., 9246 Hudson Blvd., N. Bergen, N. J.*

Founded 1905 Member A.G.M.A.

Also Manufacturers of Precision Gears and Rotary Pumps

If you write maker identify as **IEN - 2970**

JIG GRINDING ACCURACY *guaranteed**

INFINITE CONTROLLED SPEEDS 30,000 TO 65,000 R. P. M.

Easily connect jig grinder to jig borer or mill

Then you can finish grind in hardened steel to "tenths" . . . jig grind dowel holes square with a ground base . . . move location of holes in hardened steel blocks . . . jig grind interchangeable holes in hardened sections . . . grind small holes with diamond impregnated mandrels . . . grind contours and relief with tungsten carbide burrs . . . grind radii in die sections . . . eliminate jig bushings in tools where close spacing is essential.

Other infinitely controlled air driven spindle applications

Place spindle on most any machine. Use it for finishing contours on hardened steel working surfaces . . . burring or milling die castings . . . routing wood contours . . . carbide milling or finishing slots . . . finishing holes in hardened steel to "tenths" . . . grinding with diamond wheels, carbide burrs, or diamond impregnated mandrels.

Advantages—10 micro finishes using carbide mills . . . 6 micro finishes using mounted points, operates at any angle . . . air driven, air cooled, overheating prevented . . . speed controlled at optimum point . . . 3⅝" long motor uses little working space . . . By controlling speed at any point you abolish need for many constant speed spindles.

For immediate quotation please state machine tool application. Get this manual of photos showing operations Vulcanaire performs.

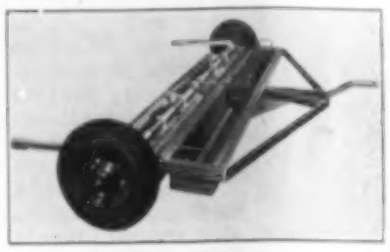
*Dependably accurate to "tenths"

VULCAN TOOL CO., 734 LORAIN, DAYTON 10, OHIO

If you write maker identify as **IEN - 2972**

MAGNET . . Alnico permanent design to sweep ferrous metals from roadways

Source: HOMER MFG. CO.
434-38 N. Main St., Dept. 115, Lima, Ohio



Picks up tramp iron

Nails, wire, ferrous metal pieces are removed from roadways, loading areas, airport aprons, runways, by this new Magnetic Road Sweeper. The Alnico permanent magnets are assembled between pneumatic tired wheels for sweep widths of 48, 60, 72 and 96 inches. A trailer hitch is included to attach the unit to a towing vehicle.

If you write maker identify as **IEN - 2973**

PIPE . . Reinforced plastic is light, strong and corrosion proof

Source: YOUNGSTOWN SHEET & TUBE CO.
Stambaugh Bldg., Dept. IEN, Youngstown 1, Ohio

Smooth bore for free flow

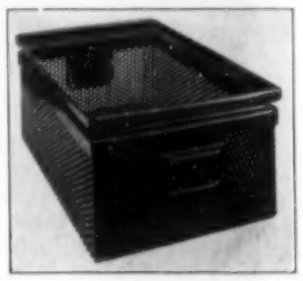
Bakelite polyester resins and a Fiberglas mat are centrifugally molded in production of a new rigid plastic pipe by the company's Fibercast Corporation affiliate. The pipe weighs about one-fifth as much as steel and will withstand stresses of 10,000 lb. per square inch. It has correspondingly high burst pressure, collapse and beam strength. It has been employed successfully for salt water disposal and sour oil gathering lines in the oil fields. The pipe will handle hydrogen sulfide, 50 per cent sulphuric acid, and acid muds as well as corrosive mine, paper mill and tanning liquors.

The pipe is available in 20-ft. lengths and in outside diameters of 2⅞, 3½ and 4½ in., for operating pressures of 100 and 200 lb. per square inch. A standard 20 ft. length of 4½-in. pipe weighs 29 pounds. Couplings and fittings are made of the same material as the pipe for permanent installation by welding or with threaded joints.

If you write maker identify as **IEN - 2974**

HANDLING . . Perforated box made of metal for parts cleaning use

Source: STERLING FACTORY EQUIPMENT CO.
189-C Charles St., Dept. IEN, Providence 4, R. I.



Made to order

Perforated sides and bottom of this new box provide for drainage. The rigid top rim construction permits stacking filled or empty boxes. Drop or drag type handles can be specified. The box is finished by painting and is available to order in a range of sizes from 10 by 6 by 5 in. to 24 by 16 by 10 inches. One size, measuring 18 by 12 by 8 in., is suggested as the most likely standard.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2975**

NOELTING **Faultless** ENGINEERED **TRUCK CASTERS** CUT HANDLING COSTS

NEW! DOUBLE ACTION SPRING CASTER

Durable, Long-lasting Spring and Draw Bars, on centerline of wheel, prevent offset of load.

Doubles Caster Life and Service

Swivel and Rigid Units

Interchangeable Standard Wheels

Wheel contacts floor surface at all levels—eliminates bounce—doesn't raise truck when mounting obstacles.

Write for descriptive literature, no obligation.

FAULTLESS CASTER CORPORATION
Dept. IE; Evansville 7, Indiana
Branches in Principal Cities—Canada Factory: Stratford, Ont.

If you write maker identify as **IEN - 2976**

HEVI DUTY ELECTRIC COMPANY

"MULTIPLE UNIT" MUFFLE FURNACE

With Many Advantages

For Temperatures to 1850° F.

FOUR STANDARD SIZES

Write for Bulletin LAB-849

★ Less Heat Loss — Improved Insulation and No Rheostats

★ Better Control Through a 36-Step Tap Changing Transformer in the Pyramidal Base

★ Pyrometer and Transformer Control Assembly in Easily Removed Base Drawer

★ Reversible "Multiple Unit" Heating Elements

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES **HEVI-DUTY** ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

If you write maker identify as **IEN - 2977**

Viscous Materials FLOW LIKE WATER

through **Parks-Cramer Jacketed Pipe and Fittings**

You can't find a better way to convey asphalt, rosin, wax, sulphur, gums, syrups, or other high melting point solid or viscous materials than through Parks-Cramer Jacketed Lines.

Steam, hot water, hot oil, or Dowtherm keep the contents in a quick moving liquid state. Plug-ups are eliminated.

Jacketed Cocks and Fittings are cast in semi-steel, Ductile iron, Ni-Resist and many other materials.

Pipes and Fittings are made in standard sizes with 1¼", 1½", 2", 3", and 4" inside diameter, and include Two-way and Three-way Cocks, Tees, Crosses, 90° and 45° Elbows, and Expansion Joints and Strainers, also 2" and 3" Relief Valves.

Write for Bulletin No. 152E

Parks-Cramer Company
ENGINEERS and CONTRACTORS
Fitchburg, Massachusetts

If you write maker identify as **IEN - 2978**

NEW! AUTOMATIC POWER FEED

...for all Benchmaster Hand-Screw Mills!

$125.00 F.O.B. FACTORY
Complete, ready to install and plug in

Four speeds in either direction! 1.2, 2.1, 3.2, and 4.5 inches of table travel per minute...all independent of spindle speed and direction of rotation.

Powerful! Table drive equals or exceeds milling capacity of the spindle.

Table travel instantly reversible! Reversible motor and simple two-way switch instantly reverses direction of table feed. Adjustable stops limit table travel in either direction.

Doesn't interfere with manual operation! Lever quickly disengages worm gear drive, permitting use of ordinary hand feeds when desired!

Easily installed in 10-15 minutes! Two bolts secure unit to end of table on any hand-screw model. Slots in adapter permit easy alignment with lead screw, eliminate fussy hole location. (*Note*—not adaptable to production models with rack and pinion table feed.)

Available factory-installed on all new Benchmaster Mills, or as an accessory for all Benchmasters now in use! See your Benchmaster dealer today!

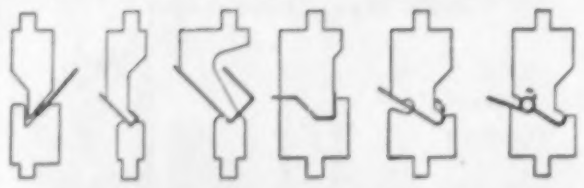
Benchmaster Manufacturing Co.
1835 W. Rosecrans Avenue
Gardena, California

benchmaster World's largest manufacturer of small punch presses and mills.

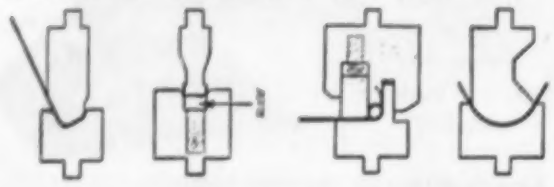
If you write maker identify as IEN - 2979

famous "34 year"

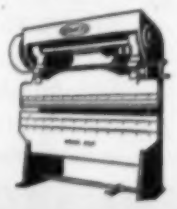
BRAKE DIES



ANY SPECIAL SIZE OR SHAPE CAN BE DEVELOPED BY OUR EXPERIENCED ENGINEERS



Made by the makers of SEMCO PRESS BRAKES (6ft.—8ft.)



Write for new literature showing 26 Standard Brake Die styles and 2 sizes of low priced Press Brakes.

SEMCO

SERVICE MACHINE CO., INC.

200 MILLER STREET • ELIZABETH 4, N. J.

If you write maker identify as IEN - 2980

Low-cost conveyor attachment marks cartons, cases automatically

Save man-hours now used for manual marking. Attach a ROLACODER Imprinter to conveyor or case-sealer and eliminate the cost of stencilling or rubber-stamping. Get neater, cleaner, more accurate marking, too. Friction-operated, self-inking. Copy changes made in minutes. *Pays for itself in weeks.*

Write for ROLACODER brochure showing models to imprint top, sides of every kind of package.

Gottscho — **ADOLPH GOTTSCHO, INC.** Hillside 5, N. J. — 50 Years of Leadership

If you write maker identify as IEN - 2981

INCREASE PRODUCTION—CUT COSTS with

A variety of pneumatic tools to provide effortless power for hundreds of production line and maintenance jobs.

Mall *featherweight*

PNEUMATIC TOOLS

Industrial plants everywhere are switching to MALL PNEUMATIC TOOLS and the results are fantastic. Production zooms overnight and costs are cut way down. Send for the free catalog that gives you all the facts showing how the many different MALL pneumatic tools will help YOU.

Model PD-103L drill weighs less than a pound yet it does a man-sized job.

40 Factory-Owned Service Warehouses, Coast to Coast, To Give You Fast, Dependable Service.

MALL TOOL COMPANY 7782 S. Chicago Avenue, Chicago 19, Illinois

Send me the MALL Pneumatic Tool Catalog.

*Name*_____ *Company*_____

*Address*_____

MU-90

If you write maker identify as IEN - 2982

DRILLING . . Production machine, to 8 spindles, adjustable speed drive

Source: EDLUND MACHINERY CO.
37 Huntington St., Dept. IEN, Cortland 44, N. Y.

Bulletin 140

Turning a crank at the front of each individually motor-driven spindle head, on this new Model 2F machine, adjusts the speed of that spindle in stepless progression. Overall range is 200 to 3,600 rpm. in direct drive and 50 to 900 rpm. with an available back gear in mesh. Low range in open drive is 200 to 1,200 rpm. High range is 600 to 3,600 rpm. There are three intermediate ranges available.

The machine rates ⅞ in. in steel when the back gears are employed. It is available with 8 and 15-in. throat dimension, in the pedestal assembly illustrated. Additional equipment, to order, includes the back gear attachment, a semi-automatic power feed that engages when the drill touches the work, a reversing motor tapper and the company's lead screw tapper. Lights and a coolant attachment also are subject to order.

If you write maker identify as IEN - 2983

LUBRICATING . . Motor-driven machine to apply heavy oven chain lubricants

Source: R. G. WHITE ENGINEERING CO.
1338 Atlantic Ave., Dept. IEN, Brooklyn 16, N. Y.

Pin points delivery

Caster mounting is provided beneath this new pressure lubricator for portable application. The lubricator itself consists of a motor driven pump, an adaptor to fit over a 5-gal. container, a delivery hose and a 2-ft. valve equipped applicator nozzle. The motor that drives the delivery pump also operates a slow speed agitator to assure correct mixture of graphite and other types of industrial lubricants.

The equipment provides positive delivery of the lubricants and protects the operator against being burned by direct contact with a hot chain. Assembly, including the caster mounting, lists at about $222.

If you write maker identify as IEN - 2984

Manufacturer of controls used about a hundred different preprinted boxes to package his product. Then he learned about the self-adhesive labels made by Avery Adhesive Label Corp., 1616 S. California St., Dept. IEN, Monrovia, California. Now the manufacturer purchases plain boxes to a set of sizes. He labels them after they have been packed. Storage space, previously required, has been cut in half.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2985

STOP DERMATITIS!

Cut sickness and absenteeism in your plant with medicated soap

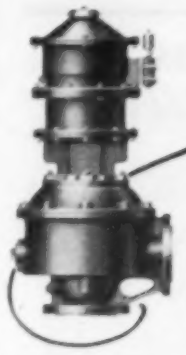
POWDERED Germa-Medica®

HAND SOAP with HEXACHLOROPHENE

POWDERED Germa-Medica with the remarkable germ-killing antiseptic, Hexachlorophene (G-11), can stop dermatitis and the spread of disease. Placed in your regular washroom soap dispensers, it gives your workers low-cost health protection. Powdered Germa-Medica won't irritate the skin, leaves hands and face feeling smooth and really clean. Start this simple and practical health program in your plant soon. Write for sample and details.

HUNTINGTON LABORATORIES, Inc. Huntington, Indiana • Toronto, Canada — HUNTINGTON

If you write maker identify as IEN - 2986



New Simplex Type CCAV Valve. Combination controlled-closing and vacuum-breaking valve.

ONE 4-INCH CONNECTION to your main pipe line . . .

PREVENTS { surge rupture / vacuum collapse

Simplex Type CCAV Valve is a new combination controlled-closing and vacuum-breaking valve!

It's easily installed, moderately priced, positive-acting. Controls transfer time, vents air and discharges water to prevent surge and hammer damage when large lines are being filled. When lines are subject to collapse from breaks or rapid draining, Type CCAV quickly breaks the vacuum.

WRITE FOR FREE BROCHURE:
SIMPLEX VALVE & METER COMPANY
6717 Upland Street, Philadelphia 42, Pa.

SIMPLEX®

VALVE AND METER COMPANY

If you write maker identify as IEN - 2987

Discover Why Pemco Wheels and Casters KEEP Rolling!

Write today . . . you'll receive by return mail our New Catalog

. . . In it you'll see why so many users of wheels and casters are choosing Pemco. Large or small, your requirements too can be handled with greater success by Pemco.

Advantages for You

For example, Pemco Wheels are distinguished by a unique solid metal hub which gives far greater rigidity, ability to absorb shock loads, and ease of operation with minimum wear. Pemco Casters feature two rows of load carrying balls for closer alignment, easier operation.

Let us put complete facts and specs in your hands — request our catalog today.

PEMCO WHEEL CO.
1881 Ravine Road
Kalamazoo, Mich.

If you write maker identify as IEN - 2988

. . . for applications requiring low electrical noise, low and constant contact drop, high current density and minimum wear.

GRAPHALLOY

EXTENSIVELY USED IN

SELSYNS • ROTATING THERMOCOUPLE and STRAIN-GAGE CIRCUITS • ROTATING JOINTS GUN-FIRE CONTROLS • DYNAMOTORS etc.

Wide range of grades available for standard and special applications.

Brush holders and coin silver slip rings available for use with Silver Graphalloy Brushes.

Write us for Data Sheets and further information. Outline your problem and we will apply our "40 years' experience" toward its solution.

OTHER GRAPHALLOY PRODUCTS:

Oil-free, self-lubricating Bushings and Bearings (applicable −100° to +300° F.; with expansion coefficient half that of steel will not seize shaft at low temperature); oil-free Piston Rings, Seal Rings, Thrust and Friction Washers, Pump Vanes.

GRAPHITE METALLIZING CORPORATION
1032 NEPPERHAN AVENUE • YONKERS, NEW YORK

If you write maker identify as **IEN - 2989**

Watson-Stillman Hand Pumps and Hydraulic Jacks

W-S Pumps are available with maximum pressure deliveries of 3,000 to 10,000 psi. Single and double plunger type . . . can be mounted on any size reservoir. Use with light oil, water with soluble oil or plain water. Excellent for operating hydraulic tools, jacks, presses and other hydraulic equipment . . . and for general hydrostatic testing.

W-S Hydraulic Jacks with independent pumps are used for many construction and maintenance jobs. Jack is connected to pump by flexible copper tubing . . . ideal for operation in inaccessible or dangerous locations. Capacities . . . 20 to 500 tons.

Write today for Bulletin A-5.

WATSON-STILLMAN FITTINGS DIVISION
H. K. PORTER COMPANY, INC.
1A Roselle, New Jersey

If you write maker identify as **IEN - 2990**

cochrane

ALL SERVICE

. . . for removal of liquid entrainment (water, oil, etc.) from vapors-gases

Clean, dry vapor-gas (steam, compressed air) is assured at point of use since liquid entrainment is effectively separated by a scientifically designed, impingement type baffle and immediately moved to the separator drain. Separated liquid cannot be wiped or carried over or under baffle to the outlet path. Pressure loss is practically nil since areaways through separator are much greater than cross-sectional area of inlet.

In all sizes ½" to 12" for working pressures up to 600 lbs.

. . . for continuous discharge of vapor condensate under vacuum or positive pressures up to 200 psi

Instantaneous response • Tremendous discharge capacity due to large port areas • Only one moving element • Self-regulating, self-cleaning cylindrical valve never leaves seat • Position handle outside body permits manual closing or opening wide to serve as an effective blow-off • Several types in many capacities available.

Write today for full details.

cochrane corporation

3152 N. 17th Street, Philadelphia 32, Pa.
Representatives in principal cities of U.S.A.

If you write maker identify as **IEN - 2992**

WRENCH . . Miniature torque unit to tighten small precision fastenings

Source: P. A. STURTEVANT COMPANY
120 E. Lake St., Dept. IEN, Addison, Ill.

For instruments

Model F80-1-G is the smallest of a new line of miniature torque wrenches. Each is equipped with a ball chain and pivoted connection for pull concentration at the exact point which corresponds with the graduated readings on the dial. This dial reads to "8" on each side of center so the wrench can be applied on either right hand or left hand fastenings. Rating is to 80 inch grams. Two other wrenches, in the miniature line, read respectively to 8 and to 16 inch ounces. Torque is established by flexing the calibrated wrench shank. The pointer attached to the head indicates the amount.

If you write maker identify as **IEN - 2993**

FLOORS . . Resurfacing material for concrete in buildings and yards

Source: MONROE COMPANY
10703 Quebec Ave., Dept. IEN, Cleveland 6, Ohio

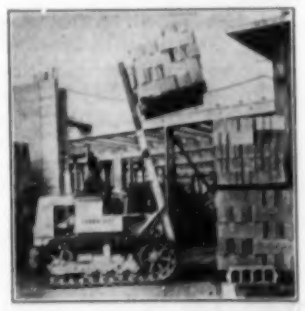
Bulletin 123 upon request

New aggregates and granular plastic resins make up the company's new Steelhard floor resurfacing material. It is shipped ready for use. It requires no special skill for application in patching or resurfacing a concrete floor, indoors or outside. It is suited particularly for loading platforms and aisles subject to heavy traffic. It will carry loads to 20 ton. It provides a good surface for trucks with narrow steel wheels. Application is made without roughing the old surface. The finished job can be trucked upon after four to six hours.

If you write maker identify as **IEN - 2994**

TRUCK . . Crawler fork lift, particularly for yard duty, 1½ ton

Source: AMERICAN TRACTOR CORP.
198 Terra St., Dept. IEN, Churubusco, Ind.



Operates anywhere

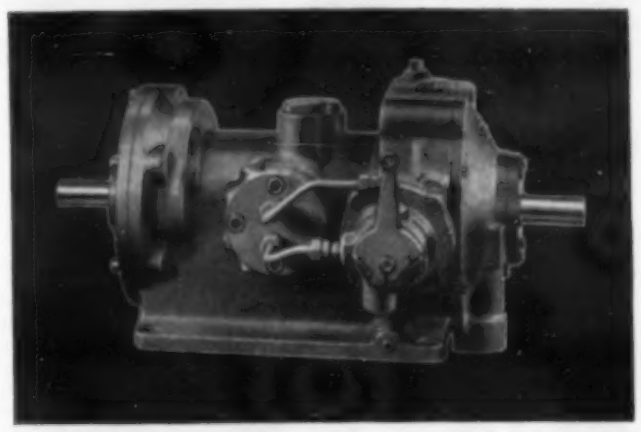
Type M3 designates a new unit in the Terra-Lift line of fork lift trucks, previously described IEN-8224-52. The forks can be replaced, in about 10 min., with a ¾-yd. bucket or a 6-ft. angling bulldozer blade.

Towing effort is 30 hp. when operating as a tractor. The truck will handle materials in mud, sand or snow and provide good traction on ice covered roadways. It can be equipped with rubber shoes in place of standard steel shoes. It is available with a 9 or 12-ft. mast. Standard equipment includes forks, bucket, bulldozer blade and tow hook. List is $5,800.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2995**

If you write maker identify as **IEN - 2996**



ANY-SPEED OILGEAR FLUID POWER TRANSMISSION Solves drive problems —Improves machine performance

Even machines that lead their fields have benefited greatly by a change to the *ANY-SPEED* Oilgear Fluid Power Transmission . . . simply because top machine performance often depends on a speed flexibility other drives just don't have. The *Any-Speed* Oilgear is *just that*—from zero to 1600 r.p.m. And once you pick your best speed it stays there . . . or until you want to change. Smooth shading of speed all the way up or down. Full control manually, hydro-electrically, pushbutton or automatic remote. Small, durable, dependable, this "power package" installs easily, ends drive trouble, saves power, cuts maintenance to a sliver. Simple, accessible design. Drives off any constant speed source. Write for descriptive Bulletin 67110A. THE OILGEAR COMPANY, 1567 West Pierce St., Milwaukee 4, Wis.

If you write maker identify as **IEN - 2997**

NEW T&B INSULATING BUSHINGS

TOUGH

Bend 'em
Pound 'em
Twist 'em

T&B ENGINEERED

for ½" to 6" Standard Rigid Conduit

These new T & B Insulating Bushings are designed to withstand rough treatment. Made of tough cellulose acetate butyrate, they're the toughest Insulating Bushings available today.

Use T & B's new Insulating Bushing wherever NEC requires protection for cable sheath or wire insulation against damage from burred or unevenly cut conduit . . . or for the ultimate in protection even where not required by code. Send today for a free sample and descriptive literature. T45

THE THOMAS & BETTS CO.
Incorporated
60 Butler Street, Elizabeth 1, New Jersey
Thomas & Betts Ltd., Montreal, P.Q., Canada
MANUFACTURERS OF FINE ELECTRICAL FITTINGS SINCE 1898

If you write maker identify as **IEN - 2998**

DeVilbiss Hose LASTS LONGER

Specially compounded materials – special braiding of select yarns – special processing and testing give you a *premium* quality hose that costs less in the long run. DeVilbiss fluid hose is unsurpassed for resistance to solvents and oils of all types. Air hose is unmatched for its flexibility, wear resistance and kinkproof construction. All this means better service – fewer failures and less replacement. *Buy the best* – buy DeVilbiss. Write for full details.

DEVILBISS

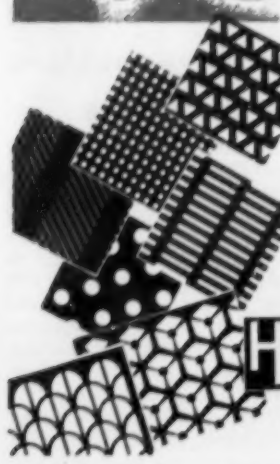
THE DEVILBISS COMPANY
Toledo, Ohio

Santa Clara, Calif. • Barrie, Ontario • London, England

If you write maker identify as **IEN - 2999**

H & K
Perforated Holes

Key holes signify security just as H & K holes signify satisfaction. Over 70 years of experience in perforating the unusual as well as the usual provides the assurance that "If it can be perforated, H & K can perforate it." Accuracy for cleaning, sizing, filtering or straining — strength for protecting and guarding — exquisite beauty for ornamental grilles, radiator covers, ventilating grilles, etc. Whatever your requirements may be for screens, guards or grilles, H & K can supply your needs. Holes so small that there are almost one thousand to the square inch, or as large as you wish — and, in various gauges of metal, plastic, hardboard, paper or other materials available in sheets, coils or plates. What is your problem?



The Harrington & King Perforating Co.
5637 Fillmore St., Chicago 44, Ill.
114 Liberty St., New York 6, N. Y.

If you write maker identify as **IEN - 3000**

Noisy Telephoning a Problem?

Solve It by Installing
BURGESS-MANNING
Acousti-Booths

- Walls of thick sound-absorbing material and patented construction reduce the loudness of noise by 50%* . . . leaving a zone of quiet.
- Doorless construction makes for a light, airy, well-ventilated booth . . . easy to keep clean.
- Low maintenance cost . . . Easy to move . . . Suited to any noisy location.

Model 602 Wall Model

Model 211 Floor Model

**Results of studies by a prominent research organization. Report available for review. Write for Bulletin A-124.*

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as **IEN - 3001**

LOCATE GROUNDS *quickly* *with the* BRUNT FAULTFINDER

Find grounds in energized power circuits—FAST. The Brunt Faultfinder—$450, express prepaid—makes it a one-man job. Country's largest manufacturers use it to prevent costly work stoppages.

FAULTFINDER FEATURES

- Imposes only 2 amperes on circuit.
- Can be used in dark or noisy locations.
- Locates faults on ungrounded wiring systems up to 550 volts, a.c. or d.c.
- Traces pole line signals without climbing.
- Combination ground detector and fault locator.
- Equally strong signal on open or enclosed wiring.
- No delicate meters or instruments to adjust.
- Small, compact, durable, easy to operate.
- Phase indicator lights visible at a distance.

ORDER TODAY AS PREVENTIVE MAINTENANCE AGAINST SHUTDOWNS OR SEND FOR BOOKLET.

Parr ELECTRIC CO. INC
25 TICHENOR LANE
NEWARK 5, N. J.

Please send me your booklet "THE BRUNT FAULTFINDER."

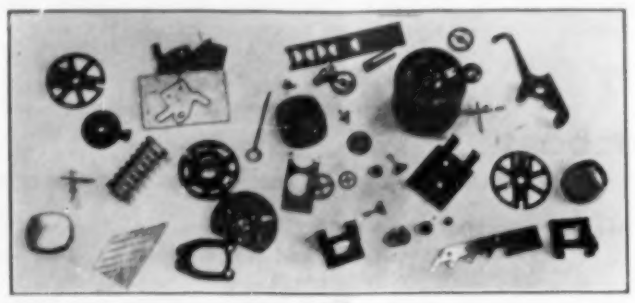
NAME.....
TITLE.....
COMPANY.....
STREET.....
CITY.....ZONE.....STATE.....

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

If you write maker identify as **IEN - 3002**

Chips of hard Arkansas stone are being used successfully to barrel finish a variety of metal parts of intricate design



with deep holes and of delicate construction. The chips are trade named Novaculite. They are characterized by their sharp edges and elongated points that permit them to do the same work as small chips without clogging. Chicago Wheel & Mfg. Co., 1101 W. Monroe St., Dept. IEN, Chicago 7, Ill., will send you samples and complete information.

If you write maker identify as **IEN - 3003**

Tool-Lease designates a new program that has been set up by Kearney & Trecker Corp., Dept. IEN, Milwaukee 14, Wis., through which it offers its lines of standard machine tools under any one of three rental agreements. The three different agreements have been established so a user can select one best suited to his requirements. Each is basically a 7-year agreement. Principal difference lies in the options permitted.

If you write maker identify as **IEN - 3004**

Lathe beds, to 32 ft. in length, can be mounted on the table of this new grinding machine to grind the ways to an overall tolerance within 0.0005 inch. The new machine replaces a shaper equipped with a grinding head attachment. Overall length is 79 feet. Drive is by four 30-hp. motors including one 40-hp. motor on the two grinding wheels so they can be operated simultaneously. Manufacturer is Thompson Grinder Co., 1534 W. Main St., Dept. IEN, Springfield, Ohio.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3005**

Break Loading Bottlenecks! *With* MagLiner MAGNESIUM DOCK BOARDS

Magnesium Light!
Magnesium Strong!
Magnesium Safe!

Write today for your copy of Magliner Bulletin DB-204

Have you considered the advantages of equipping your docks with Magliner magnesium dock boards? Are you aware of the many benefits awaiting you? *Reduced loading costs! Easier handling! Greater speed and efficiency in shipping-receiving operations!* In the case illustrated above, the manufacturer took positive steps to insure against the penalty of loading bottlenecks . . . he investigated and installed Magliner magnesium dock boards! What about you? It costs nothing to get the facts! It can keep you steps ahead of the competition!

MAGLINE, INC.
P.O. BOX 405, PINCONNING, MICHIGAN

If you write maker identify as **IEN - 3006**

HOW YOU SAVE . . .
Getting Drier Compressed Air

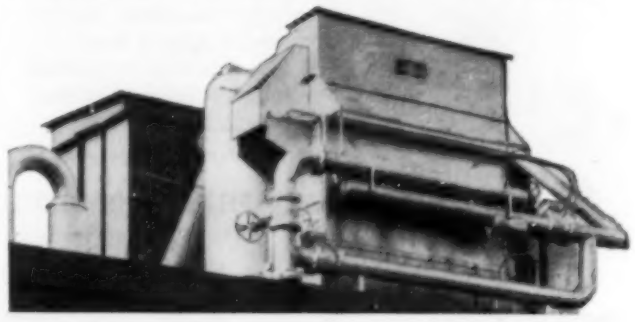
● You get lower costs and fewer troubles in the use of all air-operated machines, in paint spraying, in air cleaning or sand blasting, and lower maintenance and repair costs for all pneumatic tools.

The NIAGARA AERO AFTER COOLER assures these benefits because it cools compressed air or gas below the temperature of the surrounding atmosphere so there can be no further condensation in air lines.

Direct saving of cooling water saves you the price of the Niagara Aero After Cooler in less than two years.

Write for Bulletin No. 98

NIAGARA BLOWER COMPANY
Dept. EN, 405 Lexington Ave., New York 17, N.Y.



If you write maker identify as **IEN - 3007**

KOHLER ENGINES

4-CYCLE AIR-COOLED

K90

K160

K90	3.6 H.P.
K160	6.6 H.P.
K330	12.0 H.P.
K660	26.8 H.P.

Kohler Engines are engineered and manufactured to the high standards which have made the Kohler mark known for quality the world over. Power for garden tractors, pumps, sprayers, snow removal equipment, grain elevators, hoists, portable saws, concrete mixers, compressors, industrial lift trucks.

K330

Write for information

K660

Kohler Co., Kohler, Wisconsin Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT
ELECTRIC PLANTS • AIR-COOLED ENGINES
PRECISION CONTROLS

If you write maker identify as **IEN - 3009**

● How is your abrasive consumption? And what is maintenance costing you on your blast cleaning equipment?

If these two items constitute a skeleton in your blast cleaning closet it is time you heard the story of Controlled T chilled iron shot and grit.

Not only do you get rid of skeletons, but "Controlled T" *guarantees* you a 15% saving on your blast cleaning costs *regardless* of the price you may now be paying for chilled iron shot! The money you save on maintenance—on top of this—is all gravy for you—an extra dividend.

Get in touch with the Hickman, Williams office nearest you and ask for a free copy of "A Primer on the use of shot and grit."

National Controlled "T" Shot and Grit is Produced Exclusively by

THE NATIONAL METAL ABRASIVE CO. • Cleveland, Ohio
WESTERN METAL ABRASIVES CO. • Chicago Heights, Illinois
AND SOLD EXCLUSIVELY BY
HICKMAN, WILLIAMS & CO.
(INCORPORATED)
CHICAGO • DETROIT • CINCINNATI • ST. LOUIS • NEW YORK
CLEVELAND • PHILADELPHIA • PITTSBURGH • INDIANAPOLIS

If you write maker identify as **IEN - 3010**

Phillips *"Skid-Dump"*

Bulk materials of all kinds are handled with maximum efficiency at minimum cost . . . with the Model F-1 "Skid-Dump." Used with pallet or fork lift truck, it automatically dumps and returns to original position. Smooth, rolled edges of 3/16" steel plate, welded undercarriage provide safety, long-life, strength and durability. Capacity — 1 cu. yd.

Write for Bulletin E-15

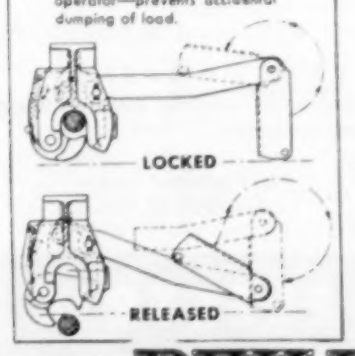
Heaviest materials easily handled with pallet truck.

Automatically dumps materials, returns and locks in original position.

Conveniently stacked, empty or full.

New Safety Lock*

Provides maximum safety for operator—prevents accidental dumping of load.



MANUFACTURERS SINCE 1863 **PHILLIPS** (MINE AND MILL SUPPLY COMPANY) PITTSBURGH, PA.

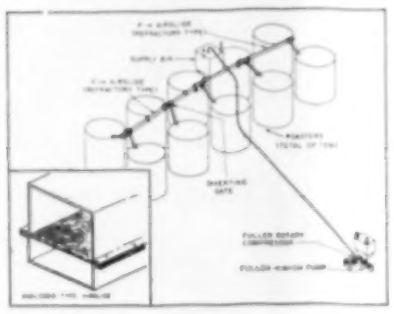
MATERIALS HANDLING EQUIPMENT

2500 JANE STREET • PITTSBURGH 3, PA.

IDEAS FOR YOU—Continued

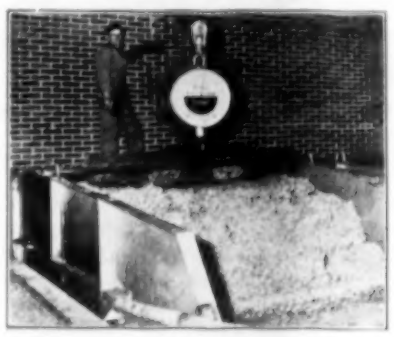
If you write maker identify as **IEN - 3012**

Dust, at 800 deg. F., is handled by a new application of the Fuller Airslide pneumatic conveyor from precipitators that recover it to roasting furnaces for reprocessing. The dust feeds into a Fuller-Kinyon pump. It delivers to an air mixing chamber in which compressed air is employed to suspend the dust and carry it forward. The new conveyor design employs porous refractory aluminum oxide between the lower air passage and the upper dust carrying passage. This heat resistant material takes the place of the fabric normally used in conveying cold materials such as cement, gypsum, soda ash, lime. Fuller Company, Dept. IEN, Catasauqua, Pa., will provide detail information.



If you write maker identify as **IEN - 3013**

Company, machining considerable quantities of various types of metal, has installed a 92-ft. disposal dock for the scrap and has divided it into compartments, each containing a pivoted 1-ton fabricated steel bin. The bins permit segregating the scrap so it can be sold at a price considerably above that which would hold if the scrap were mixed. Each bin is weighed by means of an overhead hoist and a Dillon weight indicator that applies at the rear of the bin as shown in the illustration. The indicator reads to 5,000 lb. on its 16-in. dial. W. C. Dillon & Company, 14620-K Keswick St., Dept. IEN, Van Nuys, Calif., can supply the indicator and details covering the bin construction.



If you write maker identify as **IEN - 3014**

Plastic material will not stick in a mold that has been sprayed with the new mold release liquid known as Vin-Rock Type R-2. The liquid dries almost instantly, following spray application, to produce a hard smooth glossy surface that assures release of any type of plastic material. Packaging is in 12-oz. Aerosol pressure spray cans. The liquid is colorless. It has no effect on paint adherence or on materials that are to be adhered together. Manufacturer is Vin-Rock, Inc., 8211 Almira Ave., Dept. IEN, Cleveland 2, Ohio.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3015**

ROBINSON
METERING PUMPS

FORCIBLY EJECT EXACT METERED AMOUNTS OF:

ASPHALT • RESIN • PITCH • ROSIN ADHESIVES • STEARIC ACID • PLASTER OF PARIS • PORTLAND CEMENT AND VARNISH MIXTURE • SEALING COMPOUND • POLYAMIDE • PLASTISOL PASTES • GLYPTAL MIXTURES • RUBBER BAKELITE

Melt and meter materials that are solid at normal temperatures. Easy ejection through tiny apertures.

Any of 20 discharge quantity settings can be changed in 2 seconds (one model has 50 settings) without tools.

Eject accurately .04cc to 370cc in 2/3 second.

Thermostatic heat from 70° to 500° F . . . Viscosities from #10 S.A.E. oil to 200,000 centipoises.

Unskilled operators quickly learn to do neat, clean work.

The versatile Robinson Metering Pumps may be the *economical* solution to one of your production problems. Write for free folder.

EDWARD E. ROBINSON
INCORPORATED
P.O. Box 47
95 PARK AVE. • NUTLEY 10, NEW JERSEY
Telephone NUtley 2-4510

If you write maker identify as **IEN - 3016**

Lowest in price because of manufacturing economies resulting from producing over 20,000 Type D's (1,500 to 15,000 cfm capacity) for handling dry, granular dust.

Requires less space because ROTO-CLONE combines collector, exhauster, motor, drive and dust storage hopper in one compact, shop-assembled unit.

An outstanding performer because ROTO-CLONE'S collection efficiency is constant regardless of exhaust volumes handled!

Write for Bulletin No. 272!

AAF American Air Filter
COMPANY, INC.
335 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as **IEN - 3017**

"Maverick" usually spells trouble, to the production line as well as the open range. An unknown quantity, its performance and quality are questionable. For all solder products, there's never any doubt when you choose Kester . . . the one "brand" that's always consistent, always dependable.

YOUR FREE COPY *of the Kester Technical Manual, "SOLDER and Soldering Technique," is waiting for a letter or a card. Won't you WRITE TODAY?*

KESTER
SOLDER COMPANY
4211 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as **IEN - 3018**

If you write maker identify as IEN - 3019

TODAY'S BEST BUY!

MODEL B
5' x 10' Capacity

A FULL 5 x 10 CAPACITY LOW COST SAW FOR LARGE AND SMALL PLANTS

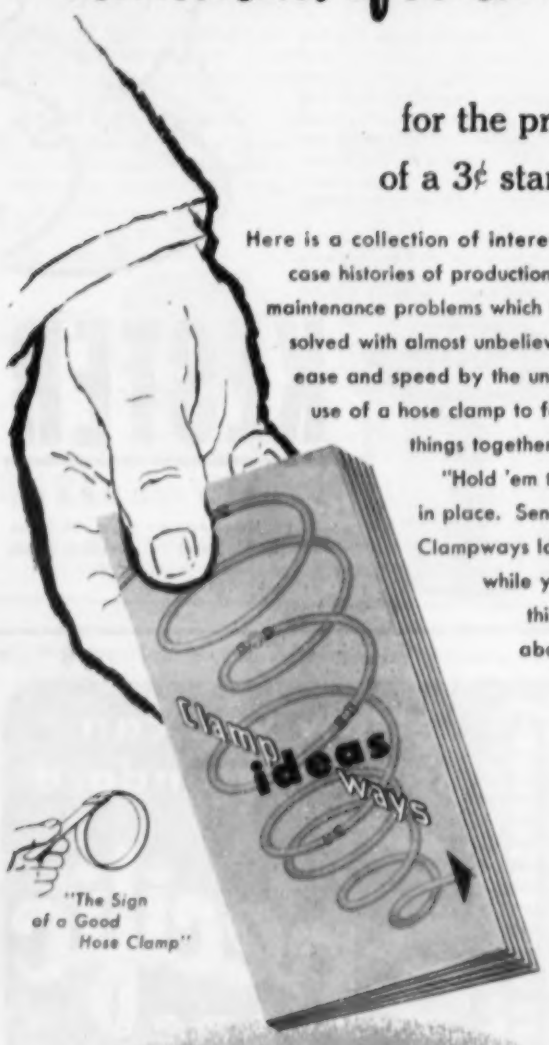
WRITE FOR DETAILS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 3020

ideas...worth hundreds of dollars

for the price of a 3¢ stamp



Here is a collection of interesting case histories of production and maintenance problems which were solved with almost unbelievable ease and speed by the unusual use of a hose clamp to fasten things together and "Hold 'em tight" in place. Send for Clampways Ideas" while you're thinking about it.

"The Sign of a Good Hose Clamp"

PUNCH-LOK Company

do it now

Punch-Lok Company
Dept. B, 321 North Justine Street
Chicago 7, Illinois

send me Clampways ideas FREE

Firm Name
My Name Title
Address
City State

4962

If you write maker identify as IEN - 3022

RELAY . . For starting duty on single phase capacitor start motors

Source: SQUARE D COMPANY
4041 N. Richards St., Dept. IEN, Milwaukee 12, Wis.

Bulletin 8505 Type C

Class 8505, Type C, is a new voltage sensitive relay to disconnect the start winding or reduce capacitance when a single phase capacitor start motor approaches full speed. It is adjusted at the factory for pull-in voltage within the range required for a given application.

Assembly is on a molded plastic base. Overall dimensions are about 2¼ by 2 by 2¾ inches. The clapper type magnet is designed with a permanent air gap and is mounted on a knife edge bearing. Ground sealing surfaces and a shading coil are standard.

The contacts are double break silver on the single-pole normally closed relay. They will handle start winding currents to 50 amp. on 110 volts and to 35 amp. on 220 volts. The magnet coil is designed for continuous duty to 440-volt 60-cycle or 300-volt 25-cycle ac.

If you write maker identify as IEN - 3023

FEEDING . . Meter and ejector for small amounts of liquid chemicals

Source: FISCHER & PORTER CO.
19 Jacksonville Road, Dept. IEN, Hatboro, Pa.

Four standard sizes

Corrosive chemicals can be fed directly into a main stream with this new corrosion resistant Feedrator. Assembly is in a Lucite block measuring 2¾ in. in width by 4¼ in. in height.

By-pass flow, created by pressure differential in the main line, enters at the top of the block, moves down through the ejector to create a partial vacuum on the ejector side. This vacuum induces the reagent to flow through the inlet at the bottom of the block, up through the metering tube and into the mixing chamber.

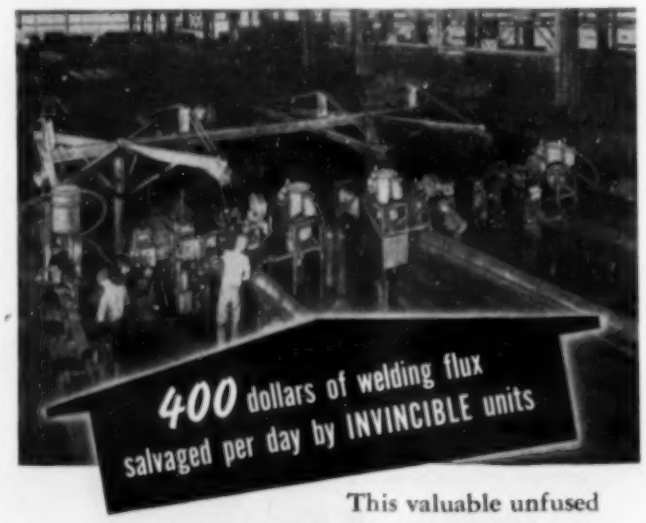
Reagent flow is controlled by adjusting the needle valve built into the side of the housing. Back flow is prevented by a ball check between the metering tube and the ejector. Four reagent capacitors are minimum at 0.03 to 0.3 gph. and maximum at 2 to 20 gal. per hour.

If you write maker identify as IEN - 3024

Problems in multiplication and division can be performed on a new Vinylite plastic slide rule measuring about 4 in. in diameter. The rule carries A and B scales with data on pipe fittings and on angles. Manufacturer is Roy B. Wolfe, 432 No. Walnut St., Dept. IEN, Danville, Ill. List price is $2.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3025



This valuable unfused flux from submerged arc welding is *automatically* salvaged by five Invincible Flux Recovery Units . . . In steady use for over four years, these Invincibles have required a minimum of repairs.

The complete line of Invincible Recovery Units offers the right size and type for every kind of submerged arc welding job.

WRITE FOR FREE FOLDER on Flux Recovery

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

If you write maker identify as IEN - 3026

NEWCO WIRE ROPE CLAMP WILL OUTLAST ANY KNOWN GRIP, CLIP OR THIMBLE!

- Holding Efficiency 95% to 100% of Catalog List
- Easily, Quickly Installed
- Easily Adapted to Making Slings

Users of Newco Clamps report two to three times longer life. Why? They're built stronger! Bearing surface is 5 to 10 times greater than pressed steel thimble. Patented locking construction automatically forces clamp to hold tighter when load gets heavier—with maximum protection to wire rope. Impossible to shear bolts off; rope pressure pushes keying sections together, prevents movement of bolts up and down. Users report greater holding efficiency than "U" bolt type clips. Assembly includes two sections, bolts, *no clips*. Simple as a-b-c to install with no special tools required.

HERE'S PROOF!

This Newco Clamp has been on the job steadily on a crane, using a magnet, for Schiller Park Compressed Steel Corp. for many months without any noticeable wear.

wire rope NEWCO CLAMP

GET ALL THE FACTS! See your Distributor or write today for complete specifications, details and prices on the amazing Newco Clamp!

NEWMAN MANUFACTURING & SALES COMPANY
Dept. 101, 205 Westport Road, Kansas City 11, Mo.

If you write maker identify as IEN - 3027

Salt Bath NEUTRAL HARDENING means just what it says!

...and far faster production at lower cost!

Photomicrograph showing absence of scale or decarb in S.A.E. 1085 steel hardened at 1500° F. in neutral salt bath and quenched in oil. (Etched in 2% Nital.)

Because it seals out all air . . .

Because it leaves a thin film of protective salt on the work right up to the moment of quenching . . .

A neutral salt bath provides the ideal means of heating carbon or alloy steel parts. Scaling, pitting, carburizing and decarburizing are avoided. "Protective atmosphere", gas generating equipment and skilled operators are eliminated.

Heating cycles are 4 to 6 times faster than in atmosphere or radiant type furnaces.

Automatic electrodynamic stirring action within the bath means faster heating and a guaranteed temperature uniformity within 5°F. Ceramic pots last 5 years or longer and avoid bath contamination by metal oxides produced by metal pots.

Write on company stationery for 72-page Ajax Booklet 116B

AJAX ELECTRIC COMPANY
World's largest manufacturer of electric heat-treating furnaces exclusively

900 Frankford Avenue
Philadelphia 23, Penna.

AJAX Trade Mark
HULTGREN

ELECTRIC SALT BATH FURNACES

If you write maker identify as IEN - 3029

Like these world famous "Guards"

ID LAMINATED PADLOCKS

Protect and Identify

New Eagle laminated husky padlock offers top security . . . plus . . . an exclusive identifying metal panel (⅞" wide by ¾" deep). Can be etched (in color) with all types of identifying information — warnings, department names and numbers, trademarks, emblems, clubs, etc. Applications practically unlimited. Write today for free illustrated folder.

the EAGLE LOCK COMPANY
Subsidiary of Bowser, Inc.
TERRYVILLE, CONNECTICUT

If you write maker identify as IEN - 3030

Your property and employees are protected because the sealed, Century Explosion Proof frame prevents motor sparks from igniting explosive gases, vapors or combustible dusts. Naturally, all corrosive and abrasive material in the air is also sealed out of the Century Explosion Proof Motor. A steady fan blast of air between the inner and outer frames keeps the motor safely cool under rated loads.

For your protection, always specify Century motors on new equipment or for replacement. Your nearby Century Sales Office or authorized Century Distributor will be glad to give you full information on the complete Century motor line—from ⅛ to 400 horsepower.

CENTURY ELECTRIC COMPANY
1806 Pine Street
St. Louis 3, Missouri
Offices and Stock Points in Principal Cities

Century C MOTORS

-787

If you write maker identify as IEN - 3032

SAWING . . Band saw machine, three wheel design, 24 inch throat

Source: BETT-MARR MFG. CO.
621 Excelsior Blvd., Dept. IEN, Hopkins, Minn.

Two traction wheels

Model 24S is a new design in the company's line of band saw machines. It is suited for use on metal and non-metallic work. It is particularly useful in cutting stacked sheet metal. Capacity is to the center of a 48-in. sheet. The machine measures 44 by 22 by 61 inches. The table is 20 by 22 inches.

The two bottom band wheels are chain connected in the adjustable speed drive which can be set at 100 to 3,300 fpm. Shafts are mounted on neoprene sealed factory lubricated ball bearings. The wheels are enclosed for safe operation. The band frame is cast iron for rigidity and strength.

If you write maker identify as IEN - 3033

PAINTING . . Rubberized liquid to apply on concrete, metal, wood

Source: EARL PAINT CORP.
240 Genesee St., Dept. IEN, Utica 2, N. Y.

Technical data upon request

Erchlor 1900 is a new synthetic rubberized liquid, highly resistant to chemical attack. It is suited for use on equipment, floors, interior and exterior structures. In the latter case, a red lead pigmented primer is recommended to be followed by two finish coats of the new material. A quick drying chromate primer is recommended, for use with two coats, for equipment such as bulldozers, cranes, tractors, trucks. Application is by brush or spray. Coverage is about 250 sq. ft. per gallon.

If you write maker identify as IEN - 3034

VALVE . . For toilet tank, replaces tank ball and guide wires

Source: LAVELLE RUBBER CO.
424 N. Wood St., Dept. IEN, Chicago 22, Ill.

Patent 2,598,967

Korky trade names a new closet tank seat valve for use in place of the conventional tank ball with its lift and guide wires. The new valve mounts on the base of the overflow pipe in a standard toilet tank and connects by means of a bead chain to the flushing lever. The arms between the anchoring base and the valve body flex when the valve is lifted to flush a toilet. The valve floats back down to closed position where it holds to make a tight seal.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3035

HOW TO SELECT STRAPPING TOOLS

● Complete catalog offered by Brainard Steel lists applications of all types of tools and accessories for tensional and heavy-duty steel strapping. Includes specifications; fully illustrated. With the Brainard Strapping System, you can improve efficiency of packaging, carloading, palletizing, bundling, export crating, and warehousing —Brainard's complete line covers over 1000 kinds of strapping, tools and accessories. Get the complete story now.

Brainard
STEEL DIVISION
SHARON STEEL CORPORATION

For Catalog write:
BRAINARD STEEL DIVISION
Griswold Street, Dept. 11-3
Warren, Ohio

If you write maker identify as IEN - 3036

How to check precision gears quickly, conclusively, to closest tolerances

With the Kodak Conju-Gage Gear Checker, you pass every right gear, reject every wrong gear—check tooth-to-tooth composite error of .0002".

The revolutionary Kodak Conju-Gage Worm Section, used with both spur and helical gears, provides a new standard of gage precision, combines accuracy with economy. Results are recorded automatically for permanent reference.

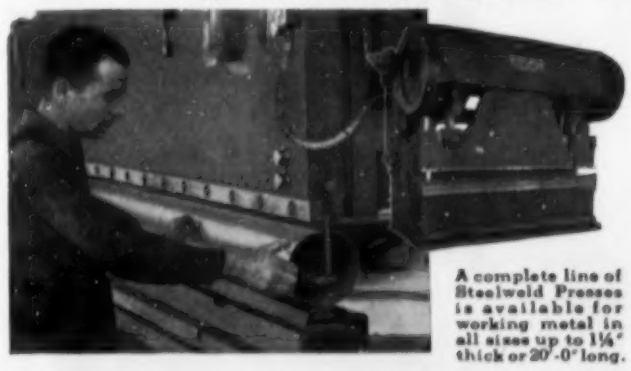
Write for a copy of the booklet, "Kodak Conju-Gage Gear Testing Principle," which shows how Conju-Gage Instrumentation can help solve your precision gear problems.

Special Products Sales Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak TRADE-MARK

CONJU-GAGE INSTRUMENTATION

If you write maker identify as IEN - 3037



A complete line of Steelweld Presses is available for working metal in all sizes up to 1¼" thick or 20'-0" long.

TUBES — Round, Square, Hexagon
MADE WITH BENDING PRESSES

Small diameter cylinders, square and hexagon tubing, and other closed shapes are easily made with simple dies on Steelweld Presses. The same machines are used for standard bending work, multiple punching, corrugating and various forming operations.

Because Steelwelds are such all around useful tools, we urge you to check on their many possibilities for serving your plant profitably.

STEELWELD BENDING PRESSES CATALOG No. 2010

Send for free copy of catalog No. 2010.

THE CLEVELAND CRANE & ENGINEERING CO.
4243 East 281st St., Wickliffe, O.

STEELWELD PRESSES

If you write maker identify as IEN - 3038

Over 31 Grades of Synthane Plastics

There are more than 31 standard grades of Synthane laminated sheets; and a number of tube and rod grades. Each grade has many properties in combination which are unavailable in non-plastic materials. See our catalog. The coupon will bring it to you.

SYNTHANE

SYNTHANE CORPORATION
SOUTH RIVER ROAD, OAKS, PENNSYLVANIA

Manufacturers of Laminated Plastics

Please send me a copy of the Synthane catalog.

Name _____

Address _____

City _____ (zone) _____ State _____

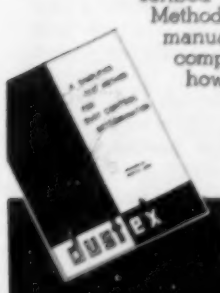
If you write maker identify as **IEN - 3039**

IMPRACTICAL!

. . . so is guessing about your dust problems!

Actually, there is no need to guess about the scope of your dust problem or collection equipment needed for effective control. The most practical way to arrive at the solution to all dust problems is to apply the simple test method described in a new booklet, "A Simplified Test Method for Dust Control Determination." This manual gives you the facts on how to get a complete analysis of dust conditions and how to be sure of effective control.

For your copy, just clip this ad to your company letterhead and sign your name and title.



dustex CORP.
1764 Walden Avenue
Buffalo 25, N. Y.

If you write maker identify as **IEN - 3040**

FAST, COMPACT—"Cargo Scout" is ideal for speedy service in congested areas, narrow aisles, inside box cars, road trucks, etc.

LOW OPERATING COST—electric power costs only pennies per day. No fumes, or vulnerable clutch.

360° STEERING plus 57" turning radius gives greater maneuverability.

EASIER MAINTENANCE—all parts instantly accessible for faster lubrication or inspection.

END CONTROL—better vision, safer, easier to get on and off.

TELESCOPING UPRIGHTS. 100" of lift with only 68" overall height, with uprights retracted, and full 50" of free lift.

WRITE FOR FULL DATA on the brand new, 2000 lb. capacity "Cargo Scout". The Elwell-Parker Electric Co., 4061 St. Clair Avenue, Cleveland 3, Ohio.

If you write maker identify as **IEN - 3041**

FREE! yours for the asking

This 20 page authoritative book on self-priming centrifugal pumps is yours for the asking — no strings attached . . . no obligation.

Now, with a trend in industry toward self-priming pumps, this profusely illustrated book, written by A. S. Marlow, Jr., will give you *all* the facts on centrifugal pump theory and self-priming pump operating principles.

Mail Coupon for your FREE copy today!

MARLOW PUMPS • ELDOREWOOD, NEW JERSEY

Please send me my free copy of "Self-Priming Centrifugal Pumps by A. S. Marlow, Jr.

Name _____

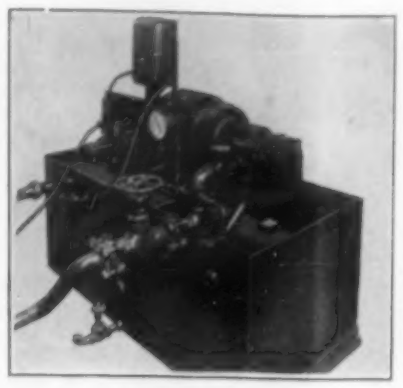
Address _____

City _____ Zone ____ State _____

If you write maker identify as **IEN - 3042**

DRIVE . . Hydraulic power unit, 7 to 54 gpm., pressure to 1,000 pounds

Source: HARVILL MFG. CO.
Dept. IEN, Corona, Calif.



For constant duty

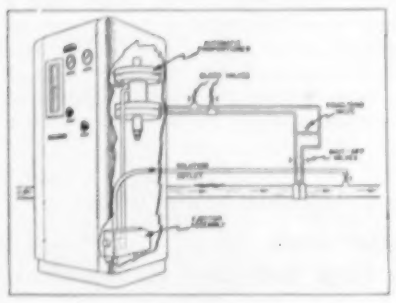
Motor rating is 7½ to 30 hp. for the company's new line of self-contained oil-hydraulic power units in which a motor-driven pump is mounted with the required control and accessory equipment on a return tank. The electrical equipment includes a magnetic starter and push button control with internal connections factory wired. The motor and pump are direct connected and flange mounted on the tank.

The pump unloads when pressure setting is reached so it does not operate against a pressure head. Inlet and return are 2-in. pipe connections. The assembly includes nitrogen charging inlet valves and connections for an accumulator, a baffle type oil cleaner and a 2-in. high pressure shut off valve.

If you write maker identify as **IEN - 3043**

FEEDING . . Chlorine proportioner controls flow to water or sewage line

Source: FISCHER & PORTER CO.
20 Jacksonville Road, Dept. IEN, Hatboro, Pa.



For automatic action

Differential pressure in a flow line, into which chlorine gas is to be fed, is connected to act upon a diaphragm and change the loading of the chlorine differential pressure regulator in this new proportioning unit. It applies in the company's vacuum type solution feed chlorinators to convert them from manual to automatic rate adjustment.

Pressure drop, across the chlorine rate valve, changes with the loading of the pressure regulator in the proportioning unit to vary the chlorine flow in direct proportion to the flow of water to be treated. Two standard differential ranges are maximum at 50 and 100 in. of water. The unit is designed for resistance to corrosion.

If you write maker identify as **IEN - 3044**

New use for the penetrating lubricant, Kroil, is in light weight pneumatic riveting hammers like those employed in aircraft assembly. The oil is used at one plant on a regular schedule. It keeps the hammers running freely and efficiently. Ask Kano Laboratories, 100 S. Thompson Lane, Dept. IEN, Nashville 11, Tenn., for particulars.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3045**

HEAT UP STEAM UNITS in 1/8 the TIME

...WITH HEAT-KWIK STEAM TRAPS YOU GET

- faster heating up
- more production
- lower steam consumption
- longer trap life
- reduction in trap capacity factor

V. D. ANDERSON COMPANY
1931 West 96th Street
Cleveland 2, Ohio

Heat-Kwik

FREE CATALOG
New brochure on Heat-Kwik steam traps shows how you can save hundreds of dollars for your plant. Write for free copy.

Super-Silver Top Steam Traps

If you write maker identify as **IEN - 3046**

Give Your Product the Advantages of...

PLASTIC NAMEPLATES by SILLCOCKS-MILLER

Here's what these quality nameplates can give you:

- Distinctive appearance.
- Unlimited choice of colors.
- Resistance to temperature and weather.
- Lasting protection to message.
- Materials to fit your specific service.
- Freedom from corrosion.
- Easily kept clean.

Sillcocks-Miller specialists can help you work out your requirements to make the most of these advantages. Write for details and send specifications for quotation.

The SILLCOCKS-MILLER Company — Pioneers in Plastic Fabrication since 1910

27 West Parker Avenue • Maplewood, N. J.

If you write maker identify as **IEN - 3047**

ORANGEVILLE HAND TRUCKS

"Keep Loads Alive"

Illustrated are a few of the many hand trucks we make for factory and warehouse use. They are typical of a wide range of available types and sizes which we can furnish in two-wheel and four-wheel designs. We also build special trucks to order to meet unusual handling needs.

Write for Catalog 50

FLOOR TRUCKS ORANGEVILLE

ORANGEVILLE MFG. CO.
ORANGEVILLE 15, PA.
Established 1879

If you write maker identify as **IEN - 3048**

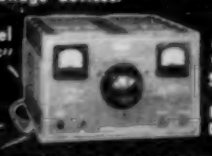
test, service DC equipment from AC lines

FILTERED DC POWER SUPPLY

0 to 28 volts up to 15 amperes continuously variable

For research and testing missile, aircraft, tank, marine electronic equipment, instruments, relays, solenoids, phone circuits, and other low voltage devices.

Model "NF"



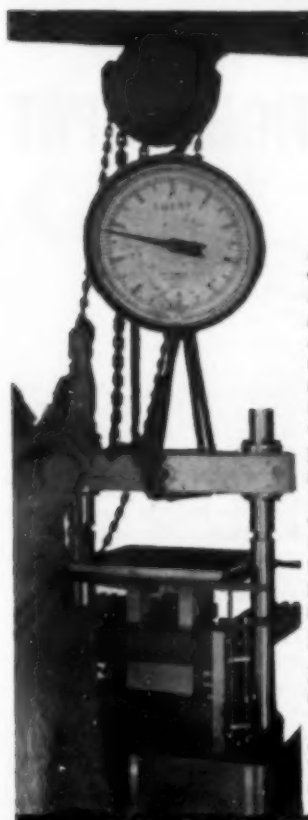
Finest available anywhere at **$195.00 NET**

FREE — Detailed Bulletin NF252

Electro ELECTRONIC EQUIPMENT

ELECTRO PRODUCTS LABORATORIES
4501-IEf N. Ravenswood Ave., Chicago 40, Ill., UPtown 8-1141

If you write maker identify as IEN - 3049



WEIGH . . .

MORE EFFICIENTLY

with the All New

EMERY CRANE SCALE CS-10

A truly efficient materials handling tool combining Laboratory Accuracy with Freight Yard Ruggedness.

Accurate — 2/10 of 1% of scale capacity. 20% tare weight adjustment.

Reliable — Rugged unit in weatherproof case. No delicate parts. Unbreakable dial crystal.

Minimum Head Room — Only 19⅛ in. additional height required.

Readable — 21½ in. dial tilted forward 15°. Exclusive "bifocal" pointer.

Economical — No knife edges, no sticky seals, no bearings: NO WEAR. No maintenance needed. Model CS-10 comes in capacities of 10,000, 5,000, 2,000, and 1,000 lb.

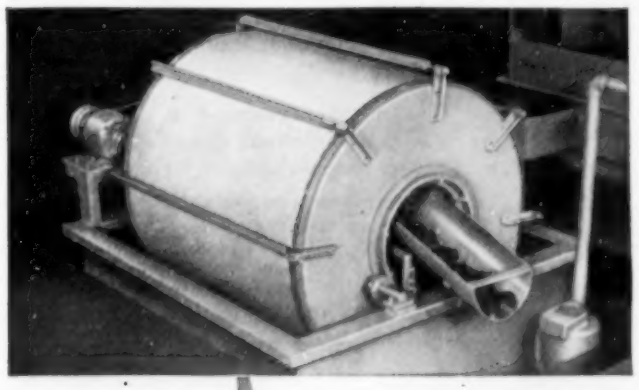
Send Today For Bulletin 532, which gives complete information and prices.

THE A. H. EMERY CO.
CRANE SCALE DIVISION
NEW CANAAN 7, CONN.

If you write maker identify as IEN - 3050

The MURRAY WAY

INDUSTRIAL FILTER



a revolutionary development in solution reclamation that gives you these money-saving features!

- **AUTOMATICALLY OPERATED**
- **SELF-CLEANING**
- **ECONOMICAL**
- **COMPACT**
- **ADAPTABLE**

The Murray-Way Industrial Filter automatically rotates fresh filtering area into position while simultaneously ejecting the contaminant. With this new unit costly consumption of throw-away filtering media is eliminated since the wire filtering screen has many times the life of cloth filtering webs.

The Murray-Way Industrial Filter is a compact unit. It offers unusually great filtering capacity in proportion to area occupied. Amazingly adaptable, the Murray-Way Filter may be used with an individual machine unit or as a central filtering station for many units. Capacity of filtration may be easily increased by adding filters in tandem—separately or in the same tank, to meet requirements. A selection of filtering screen material and size of screen opening can be supplied in monel, stainless steel, brass or bronze to fit your requirements.

For technical details of operation—write for Bulletin F-5301.

other Murray-Way equipment

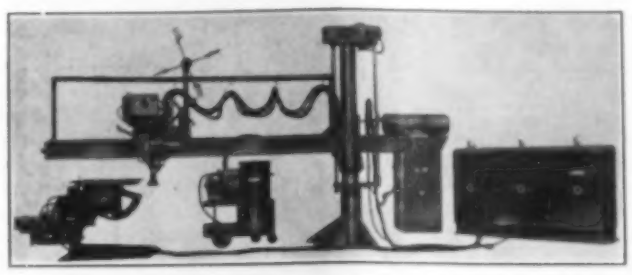
Micro-Polish Equipment
Polishing and Buffing Conveyors
Automatic Dial Tables
Standard and Special Polishing Heads
Specially Engineered Automation
Automatic Loaders and Unloaders

MURRAY WAY CORPORATION
POST OFFICE BOX 180—BIRMINGHAM, MICH
AUTOMATIC POLISHING, BUFFING, GRINDING, FILTERING EQUIPMENT

If you write maker identify as IEN - 3052

WELDING . . Automatic arc machine, radial arm design, rectifier powered

Source: LEADER WELDING & MFG. CO.
2418 Sixth St., Dept. IEN, Berkeley 2, Calif.



For maintenance and construction

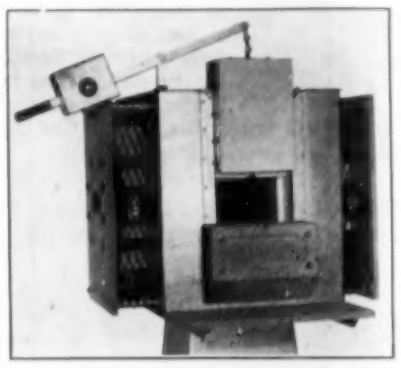
The carriage with its welding head, in this new Model 700 machine, is traversed by an electric motor through 132 in. of movement in connection with built-in limit controls that can be set for a given job. The machine provides 1,200 amp dc. through a rectifier. This power supply also can be split to provide current for three 400-amp. manual welding machines.

Construction includes manual and automatic bead lapping control, rapid traverse, lead adjustment and an angling device for the bead, dual 500-lb. flux bins mounted on casters, standard type P-3000 Leader work positioner, a standard vacuum flux recovery unit, mounted on wheels for portable application, and dual adjustable spring braked reel holders for 250 lb. of welding wire. The machine is wired ready for connection to a 3-phase 220/440-volt ac. power source. Vertical travel is through 96 inches.

If you write maker identify as IEN - 3053

HEAT TREATING . . Electric furnace, muffle design, heats to 2,500 deg. F.

Source: SENTRY COMPANY
Sentry St., Dept. IEN, Foxboro, Mass.



For tool rooms

Size 2, with input rating at 16 kw. and a work chamber measuring 4½ by 11 by 4 in., is illustrated in the company's recently improved design of its Model-Y heat treating furnaces. Each unit is designed to employ the diamond block method of atmosphere control to provide a protective atmosphere inside the chamber. Overall dimensions of Size 2 are about 28 by 28 by 57 inches. The muffle floor is 43 in. above the floor line with assembly on the new welded steel pedestal.

Silicon carbide elements are located above and below the one-piece refractory muffle chamber. The elements and their terminals are accessible on each side of the furnace and are protected by asbestos shields and removable steel mesh guards. Operation is controlled by a pyrometer operating a magnetic contactor in the element circuit. The one-piece refractory door rides in guides at the front and is counter weighted to hold in any set position.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3054

we specialize in "cracking" tough nuts!

BEATTY Co-Pun-Shear — one compact unit handles coping, punching and shearing.

BEATTY Horizontal Hydraulic Bulldozer for heavy forming, flanging and bending.

If you're confronted with a "tough nut" in the form of a metal fabricating production problem, call in a BEATTY engineer! Our men specialize in "cracking" the tough ones and our many years of experience and know-how in machine design and construction are always at your service. BEATTY machines are the answer to most production needs — they can be modified to fit, or can be custom-built to your specific requirements.

BEATTY
MACHINE & MFG. CO.
HAMMOND, IND.

If you write maker identify as IEN - 3055

CUTTING COMPLAINTS

A pinch of dust or grit at your assembly line inspection bench or in the packing and shipping room can cause very expensive service calls later on. Spencer Vacuum is easily piped to each room and bench. It will speed production—save time in general cleaning and with special attachments, can collect water, pick up welding flux, reclaim materials and do 130 other jobs that are too expensive by hand. Ask for Bulletin No. 144.

with SPENCER HARTFORD VACUUM

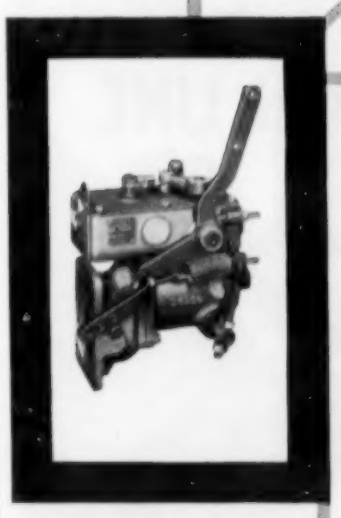
THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
466-H

If you write maker identify as IEN - 3056

high in performance

low in cost

parts & service in the field



PIERCE GOVERNORS

for all Gas and Diesel Engines

Pierce centrifugal governors are your most dependable and efficient control mechanisms for industrial engines . . . from small generator sets to monster power units . . . gas (LPG), gasoline or diesel. For engines requiring extra power to position fuel rack or valve, the Pierce centrifugal with hydraulic booster (for original equipment only) is ideal! Replacement governors and parts are available through your local distributor or fuel injection service station.

For distributor's name or information on special governing problems, write
The PIERCE GOVERNOR Co.
INCORPORATED
1636 Ohio Avenue • Anderson, Indiana

PIERCE — THE MARK OF QUALITY

"SPECIFY PIERCE CENTRIFUGAL GOVERNORS ON YOUR ENGINES"

If you write maker identify as IEN - 3057

"John Crane" *Plastic Lead Seal is the most economical all-purpose sealing compound for pipe joints, studs and gaskets—*because you use less to get a better seal.* PLS seals for the life of the connection, yet never hardens, allowing joints to be easily broken after years of service.

PLS prevents galling . . . is insoluble in water, gas, steam, many chemicals and all petroleum products. Use it for all services . . . low or high pressure applications up to 6000 psi. . . . temperatures to 500°F. Carries the Underwriters' seal of approval.

Prove to yourself that it takes less PLS to give a perfect seal. Send for a generous free sample. Crane Packing Company, 1815 Cuyler Avenue, Chicago 13, Illinois.

CRANE PACKING COMPANY

If you write maker identify as IEN - 3058

HOW TO WIN ARGUMENTS

on Surface Roughness!

FREE BULLETIN LT85 tells—

★ Why time is wasted by arguments about the roughness of parts produced.

★ How to end such arguments FOR SURE.

★ How shop men, engineers and management all gain when such arguments are settled by the Profilometer.

WRITE TODAY for your copy!

Profilometer is a registered trade name.

MICROMETRICAL MANUFACTURING COMPANY

345 S. MAIN ST. • ANN ARBOR 1, MICH.

If you write maker identify as IEN - 3059

Now! Complete Flexibility

NEW IMPROVED *Wheeler*

DURATACH LINE

Write for New DURATACH BULLETIN

New design permits complete interchangeability with 5 Duratach Reflectors . . . PLUS 3 methods of hanging!

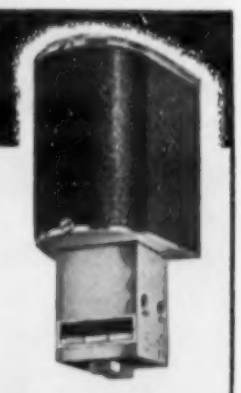
WHEELER REFLECTOR COMPANY

275 CONGRESS STREET, BOSTON 10, MASS.

DISTRIBUTED EXCLUSIVELY THROUGH ELECTRICAL WHOLESALERS

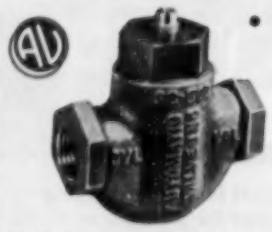
If you write maker identify as IEN - 3060

Solenoid VALVES



PILOT VALVES
3-WAY 4-WAY
For operating Master Valves and Small Cylinders

• • •



***Speed Control* VALVE**
Controls speed of Air and Hydraulic Cylinders

***3-Way and 4-Way* VALVES**
Pilot Operated
Sizes ¼" — ⅜" ½" and ¾"

Write for Bulletin

AUTOMATIC VALVE CO.
37421 GRAND RIVER AVE., FARMINGTON, MICH.

If you write maker identify as IEN - 3061

GRINDING . . Abrasive belt machine for internal and external application

Source: BRUBAKER MFG. CO.
Broad St., Dept. IEN, Landisville, Pa.

Bulletin "Burr-Belter"

A bracket and adjustable idler wheel arm are mounted on a base plate with a small motor, rating ⅙ to ¼ hp., in the assembly of this new Burr-Belter machine. The arm can be set horizontally, vertically or at an angle to take 42-in. abrasive belts measuring ½ or 1 in. in width. The spring loaded idler maintains correct tension. The 1,750-rpm. motor provides a surface speed of 1,850 fpm. A table and platen are available, to mount with the arm on the bracket, for external grinding and polishing operations.

If you write maker identify as IEN - 3062

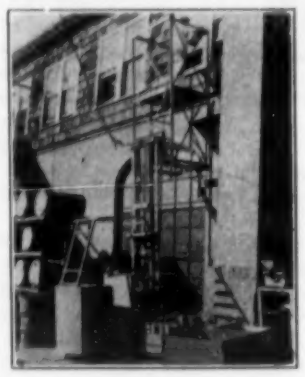
WOODWORKING . . Hand chisels in 11 sizes from ¼ to 2 inches

Source: GENERAL STEEL WAREHOUSE CO.
1830 N. Kostner Ave., Dept. IEN, Chicago 39, Ill.

Made in Sweden

Three new sets in the company's line of chisels, previously described IEN-546-47, contain 4, 6 and 11 units in plastic coated canvas rolls. The smallest set ranges from ¼ to 1 in., the largest from ¼ to 2 inches. Each chisel is fitted with a Tenite plastic handle and is protected with a strippable plastic film on the blade.

If you write maker identify as IEN - 3063



You can work "up high" if you have a platform, like the one shown in the illustration, and a fork-lift truck with a remote elevating and lowering control. Lewis-Shepard, 125 Walnut St., Dept. IEN, Watertown 72, Mass. can provide both.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3064

BOOST PUMPS

High Pressures

Low Prices

Measures 8¼" wide x 9⅝" deep.

Boost 100 PSI. air pressure to 10,000 PSI, fluid pressure for $173.25 (FOB Gardena, Calif.). Eight standard models for output fluid pressures of 1,000 to 30,000 PSI. Special models for lower or higher pressures.

Applicable wherever low volume output at high pressures is the requirement. For oil or water service. Complete power packages also available. Send for bulletins.

SPRAGUE
Engineering and Sales Corp.
1144 West 135th Street, Gardena, California

If you write maker identify as IEN - 3065

EASIEST WAY OUT OF A TIGHT SPOT

"YANKEE"
Offset Ratchet Screw Driver

If there's an inch of clearance above or below the screw and room alongside to move your hand even half an inch, you can drive or draw that screw easily, quickly with a "Yankee" Offset Ratchet Screw Driver No. 3400. Only 3⅞" long, yet it has the power of a heavy, rigid 8" driver, will seat even a No. 14 screw. Two blades, ¼" and ⅜". Special alloy steel, hardened and tempered. Other models — No. 3800 for larger screws, No. 3423 for Phillips Screws; also No. 3600-5 Kit with handle and interchangeable adapters for hollow set and cap screws. All ratcheted to give fast, powerful action with the slightest swing of the arc. Sold by industrial distributors.

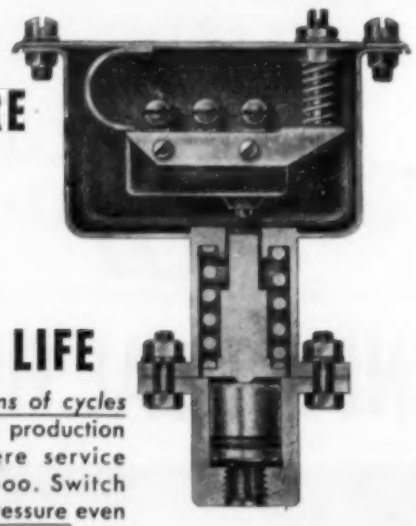
Write for the "Yankee" Tool Book

NORTH BROS. MFG. CO.
204 West Lehigh Avenue
Philadelphia 33, Pennsylvania
DIVISION OF STANLEY TOOLS

STANLEY
Reg. U.S. Pat. Off.

If you write maker identify as IEN - 3066

PISTON PRESSURE SWITCH WITH LONG SERVICE LIFE



. . . where millions of cycles are expected, on production equipment, where service troubles are taboo. Switch has high proof pressure even at low settings.

For the original equipment manufacturer — extreme flexibility; the same basic switch converts to an infinite number of service conditions by simply changing fitting kits.

The unit may be mounted in any position, mounting bracket is adjustable up and down and 360° around the neck of the switch.

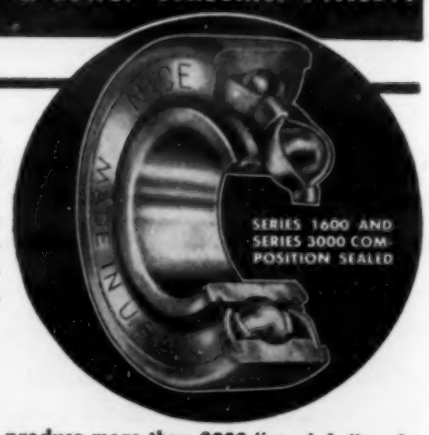
Low priced due to production savings without sacrifice of quality. Write for bulletin 9612.

BARKSDALE VALVES
5125 ALCOA AVE., LOS ANGELES 58, CAL.

If you write maker identify as IEN - 3067

THE TREND is to Product Improvement & Lower Consumer Prices..

. . . and experienced NICE field men and factory engineers can help you accomplish these important objectives.



NICE is tooled to produce more than 2000 "specials," and more than 750 sizes and types of 25 different catalog standard Series are normally available from stock. Series 1600 (precision) and Series 3000 (unground) are illustrated. They are of the same "precision type" construction and are available shielded, sealed or open.

For complete information on the NICE LINE write for Catalog No. 150.

NICE BALL BEARING CO.
NICETOWN • PHILADELPHIA • PENNSYLVANIA

If you write maker identify as IEN - 3068

Set up Fume Ventilation yourself with SPIRATUBE®

SPIRATUBE's design qualities make it ideal for portable and semi-permanent ventilation service, fume removal, all dust collection systems. It has the greatest flexibility and retractability. Sections of SPIRATUBE link together or detach in 10 seconds! No tools needed, no parts to get lost. Nothing could be simpler. And most important, YOU CAN INSTALL SPIRATUBE YOURSELF. Whatever your ducting requirements, FLEXIBLE's line of tubing will meet them better, cost less.

WRITE TODAY for this Illustrated Booklet

Flexible Tubing CORPORATION

For all ducting systems: FLEXFLYTE® SPIRATUBE® AYRTUBE®

Guilford, Connecticut — Pasadena 1, California

If you write maker identify as IEN - 3069

DOCKSON GOGGLES

Built for Better Protection!

ADVANCED DESIGN— Dockson Goggles are safety engineered by eye protection specialists to give you the most modern protection available.

COMFORT PLUS— Dockson Goggles are built with the worker in mind. True comfort reduces hazard, strain, and fatigue.

TOP CONSTRUCTION— Over 30 years of dependable craftsmanship is yours in every Dockson Goggle. Only the finest materials are used.

YOUR DOCKSON DISTRIBUTOR— A selected specialist, stocks a complete line of Dockson products to give you fast service and personal attention. We back our distributors 100%.

No. 50 SERIES—New, sturdy, lightweight plastic welding goggle that snugly fits any facial contour, gives complete spark protection—easily replaceable lenses.

No. 60 SERIES—A general purpose chipping and grinding goggle that is comfortable, light, and sturdy.

No. 76 SERIES—A general use welding goggle that is, like all Dockson Goggles, easy to raise and lower.

No. 176 SERIES—A headgear goggle for general welding use that may be worn close to the face or at any adjusted off-the-face angle.

Dockson CORPORATION

WRITE FOR YOUR DISTRIBUTOR'S NAME AND OUR COMPLETE CATALOG OF HEAD AND EYE SAFETY EQUIPMENT.

3839 Wabash Ave. • Detroit 8, Michigan

If you write maker identify as IEN - 3071

MOTOR . . Open type ac. rates 1½ hp., for jet pump drive

Source: GENERAL ELECTRIC CO. Dept. 6X-201, Schenectady 5, N. Y.

Fan cooled

New size has been added to the company's line of jet pump motors, previously described IEN-11722-53. The motor is available in single and polyphase open design. It can be mounted horizontally or vertically and conforms to standard NEMA mounting and shaft dimensions. Operation is at 3,450 rpm. on 110/220-volt 60-cycle single-phase and on 208-220/440-volt 60/50-cycle polyphase ac.

Automatic reset thermal protection is provided on the single-phase designs. Leads are color coded. Automotive type grease fittings and locked bearings are standard equipment. A capacitor is employed to assist in starting heavy loads. Formex wire is standard in the windings.

If you write maker identify as IEN - 3072

HOSE . . Synthetic rubber, braid reinforced to handle propane gas

Source: HEWITT-ROBINS INC. 666 Glenbrook Road, Dept. IEN, Stamford, Conn.

Pressure to 350 pounds

Synthetic rubber tube in this new hose is reinforced with a 3-braid carcass and is covered with a smooth neoprene tube and outer covering of tough synthetic rubber. The hose resists weathering, sun checking and oil deterioration. It is available in lengths of 100, 125 and 150 feet. A static wire is built into the carcass. Three sizes are ½, ¾ and 1 in. in inside diameter.

If you write maker identify as IEN - 3073

CRANE . . Ball bearing jib design to 5 ton, takes trolley suspended hoist

Source: H. L. BUSHMAN COMPANY 5729 W. Lake St., Dept. IEN, Chicago 44, Ill.

Bulletin, "Jib Cranes"

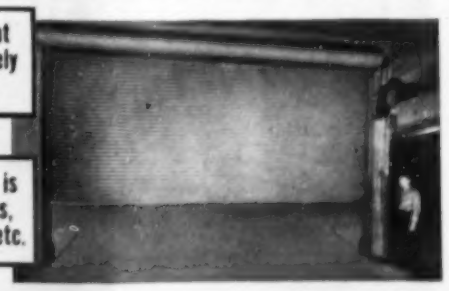
I-beam structure is mounted on sealed thrust and radial ball bearings for rotation through 360 deg. around a tubular column in this new pillar type jib crane. The assembly is available in 16 and 20-ft. heights, measured from the floor to the bottom beam flange. Span, from the center of the column to the end of the beam, ranges from 10 to 20 ft. in the smallest 500-lb. unit and from 10 to 16 ft. in the largest 5-ton assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3074

Door rises straight upward—completely out of the way.

All ceiling space is clear—for hoists, conveyors, ducts, etc.



Steel jambs anchor curtain against wind or storm damage!

Rugged, all-metal resistance to fire, storm or intrusion.

All floor and wall space around door always fully usable.

Clears the entire opening, stays out of reach of damage.

Kinnear Steel Rolling Doors

Originated by Kinnear, the door with the interlocking steel slat curtain has set the pace in long-lasting, low-maintenance efficiency and all-metal protection. Coiling into small space just above the doorway, it opens *completely* out of the way, clears the *entire* opening, and permits use of all surrounding floor and wall space at all times. Built any size; motor or manual operation. Write for the new Kinnear catalog.

The KINNEAR Mfg. Co.

Factories: 2380-2400 Fields Ave., Columbus 16, Ohio, 1742 Yosemite Ave., San Francisco 24, Calif.

Offices & Agents in Principal Cities

KINNEAR ROLLING DOORS *Saving Ways in Doorways*

If you write maker identify as IEN - 3075

. . . used for over 15 years on "TACO" Water Circulating Pumps to assure dependable operation

Illustrated is a Taco Water Circulating Pump manufactured by Taco Heaters Incorporated, Providence, R.I. The motors used in these units have built-in Klixon Protectors to prevent motor burnouts. Here's what Mr. R. T. Schoerner, Chief Engineer, has to say about Klixon . . .

"We have been using motors equipped with Klixon Overload Protectors on our circulating pumps for more than 15 years. We have found these protectors to be unusually dependable for this tough service."

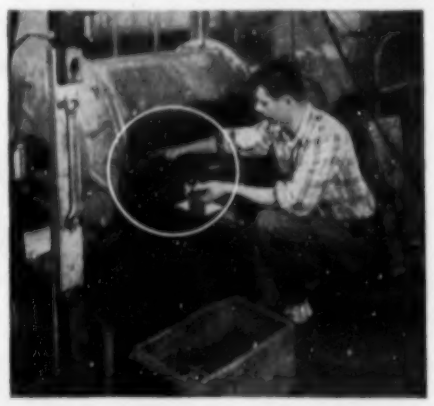
As a user of electric motors, you can keep your equipment operating, cut motor repair and replacement costs by using motors with built-in Klixon Protectors. The additional cost is low . . . pays for itself in short order.

SPENCER THERMOSTAT *Division of Metals & Controls Corporation* 203 FOREST ST., ATTLEBORO, MASS.

KLIXON

If you write maker identify as IEN - 3076

Start with ALUNDUM* tumbling abrasive . . . finish with the



"TOUCH OF GOLD"

Some reasons why barrel-finishing with Norton ALUNDUM tumbling abrasive is standard in leading plants:

- It provides the fastest, most economical method of finishing metal parts to exact dimensions and surface finishes.
- It removes burrs, flash, tool marks and heat scale from large quantities of parts, saving endless man-hours.
- It eliminates many slow hand-finishing operations, increasing production rate of parts from tiny needles to hefty castings.

Learn how ALUNDUM tumbling abrasive can bring the value-adding, cost-cutting "Touch of Gold" to *your* finishing. See your Norton Distributor. Or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas, Inc., Worcester 6, Mass. 267G

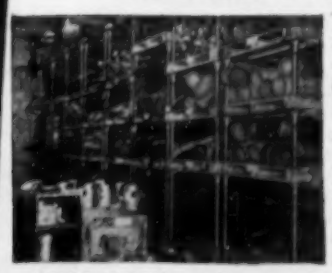
*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries

NORTON ABRASIVES *Making better products . . . to make other products better*

If you write maker identify as IEN - 3077

"Saved Cost of New Warehouse" says PALTIER USER

Paltier STORAGE SYSTEM



increases storage space up to **75%** and more — decreases man handling as much as **75%**

ASK US: PALTIER studies your storage problem—engineers and designs a system for your specific needs.

Many PALTIER installations pay for themselves "right from the start."

This booklet tells the PALTIER story, ask for it today.

THE PALTIER CORP. 1711 Kentucky St., Michigan City, Ind.

If you write maker identify as IEN - 3078

YOU BENEFIT 4 WAYS when you insist on this mark

TRADE CU MARK

CURTIS UNIVERSAL JOINTS

1. ***Availability*** — 14 sizes always in stock; ⅜" to 4" O.D., bored or unbored hubs.
2. ***Quality Standards*** — Curtis Joints set the standards for the industry; *uniform* high quality provides complete protection.
3. ***Simplicity*** — *fewer* parts, simpler construction, easy assembly and disassembly.
4. ***Constant Tests*** — catalog figures substantiated by constant tests on production joints in the factory for torque, tension and compression.

PLUS — facilities and engineering skill to handle special specification jobs always available.

Not sold through distributors: write direct for free engineering data.

CURTIS UNIVERSAL JOINT CO., INC.
7 BIRNIE AVENUE
SPRINGFIELD, MASS.
As near to you as your telephone

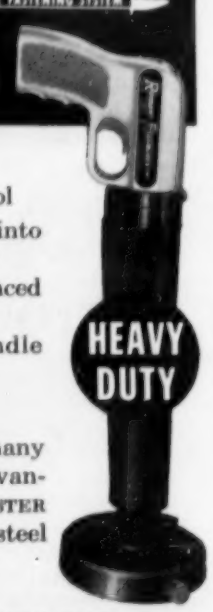
Trade CU Mark

A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN - 3079

NEW! Ramset FASTENING SYSTEM

SUPER-POWER JOBMASTER



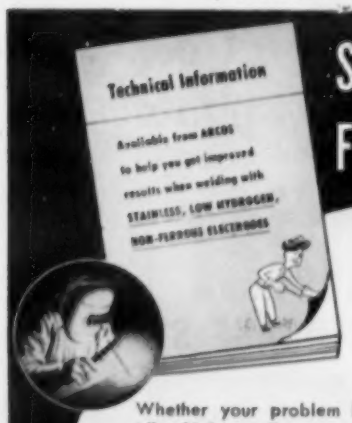
- Shortest, lightest, heavy-duty tool
- Greatest driving power—fastens into 1" steel or into hardest concrete
- New power-sealed charges, balanced to the tool
- Circle-Set Shield, with 12 handle positions
- Faster, easier operation

Ask your dealer to show you the many time-saving and money-saving advantages of the SUPER-POWER JOBMASTER for maintenance fastenings into steel and concrete.

Ramset Fasteners, Inc.
Ramset Division, Olin Industries, Inc.
12143 BEREA ROAD • CLEVELAND 11, OHIO

FIRST IN POWDER ACTUATED FASTENING — AN Olin PRODUCT

If you write maker identify as IEN - 3080



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A Directory of Technical Data Available From Arcos To Help You On Your Welding Jobs

Whether your problem involves welding stainless, low alloy-high tensile, or non-ferrous metals, this handy Directory will tell you quickly the wealth of practical information available from Arcos for your use. Right at your fingertips it places a convenient recap on what Arcos offers, such as: **Application Chart and Weld Metal Analysis on 56 Different Arcos Electrodes; Stainless Electrode Selector For Welding Stainless Steels; ABC's of Welding High Tensile Steels; plus informative charts, electrode data sheets, reprinted articles on welding, technical guides, etc.**

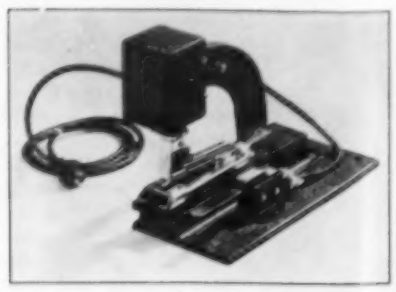
Send for your copy today. Ask for booklet #10528. There's no obligation. And for dependable welding results at all times, WELD WITH ARCOS STAINLESS, LOW HYDROGEN and NON-FERROUS ELECTRODES.

ARCOS CORPORATION
1500 South 50th Street • Philadelphia 43, Pa.

If you write maker identify as IEN - 3081

STAPLING . . Electric operator for use with a standard hand machine

Source: ANDREW TECHNICAL SERVICE
6972 N. Clark St., Dept. IEN, Chicago 26, Ill.



Solenoid equipped

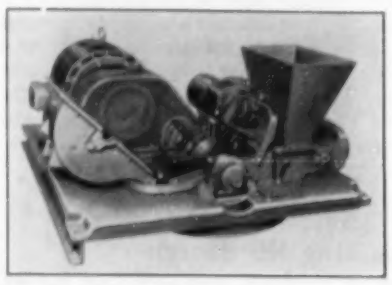
A hand stapler applies beneath the power head in this new electric operator. It stands beside a switch equipped with an operating lever. A little pressure on the paper being stapled, against the switch arm, is sufficient to close the circuit and drive a staple. The machine also can be equipped with a foot switch. Both of the operator's hands are free to handle the work in either case.

The head and stapler are particularly suited for use in packaging operations and in paper assembly work. Connection is made to a 110-volt ac. power source. Weight is 10 lb. for the single head machine and list price is $75. A twin head machine, that will operate two staplers simultaneously, is also available. In this case the staplers can be mounted within 2 to 12 in. of each other to meet requirements.

If you write maker identify as IEN - 3082

PULVERIZING . . Impact machine to powder dry grindable materials

Source: COMBUSTION ENGINEERING INC.
1315 N. Branch St., Dept. IEN, Chicago 22, Ill.



Bulletin 73

New line of hammer type screen pulverizers, for medium fine grinding, is announced by the company's Raymond Division. The line is trade named Ray-Ducer. It includes three machine sizes. Applications are in grinding materials such as food products, dry colors, filter cake, chemicals. The mill, its feeder, the motors and variable speed feed drive are mounted on a metal base measuring 42 by 48 in. in the smallest model.

Construction features accessibility for inspection, maintenance and screen changing. Standard screens are made in units with round holes or diagonal slot perforations. Round hole sizes range from 0.024 to 0.250 inch.

If you write maker identify as IEN - 3083

Carbon monoxide is converted to carbon dioxide for harmless exhaust from small gasoline engines by a new assembly of the catalytic unit manufactured by Oxy-Catalyst, Inc., 392 Lancaster Ave., Dept. IEN, Wayne, Penna. This unit, previously described IEN-11510-50, appears on an engine driven sweeping machine to permit safe use of the machine in indoor areas. It adds about $150 to the cost of the sweeper.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3084

NOW SPECIFIC GRAVITY RECORDING OF LIQUIDS AT ANY DISTANCE

RECORDING TRANSMITTER

Accurate long-distance transmission of specific gravity recordings is no longer a problem with the new Arcco-Anubis Metameter Recording and Transmitting Liquid Gravitometer. This instrument combines the mechanism of the standard Arcco Liquid Gravitometer with a metameter telemeter transmission system which records and transmits the specific gravity record to control room or other remote location. The interconnecting line may be any two-wire electrical circuit or its equivalent: private wires, telephone circuits, carrier current channels, or radio (VHF or UHF).

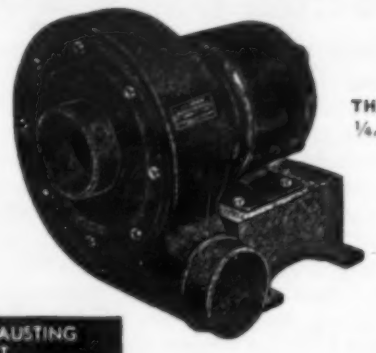
The range of the standard instrument is .15 or larger, but instruments with ranges of .10 or .05 can be supplied. Specific gravity charts are available for many gravity ranges, and special degree A.P.I. charts can be furnished at slight additional cost. Request Bulletin No. 111-R2B for complete details.

RECORDING RECEIVER

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

If you write maker identify as IEN - 3085

THE *Sutton* MOTOR DRIVEN PRESSURE BLOWER



THREE SIZES ¼, ½, 1 H.P.

USE FOR
- EXHAUSTING
- DUST
- SMOKE
- FUMES
- VAPOR
- FORGE BLASTING

CONVEYING COTTON, WOOL, SHAVINGS
COOLING AND DRYING

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY, CENTRIFUGAL TYPE. Direction of discharge may be changed to any of eight 4 degree positions. Straight wall construction reduces windage and increases efficiency. Standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor, open or totally enclosed types. Capacities, 100 to 800 cu. ft. per min. at static pressures from ½" to 6".

WRITE FOR LITERATURE AND PRICES

Sutton Manufacturing Corp.
126 W. WILSON AVENUE NORFOLK, VIRGINIA

If you write maker identify as IEN - 3086

You can easily remove the jet assembly in a MCF pump for cleaning.

For high efficiency in creating high vacuum

CVC's type MCF fractionating oil diffusion pumps are designed particularly for high efficiency in pumping large gas loads or gases of low molecular weight.

This series of high vacuum pumps ranges from a 2-inch diameter model for exhausting cathode ray tubes to models several feet in diameter for giant synchrocyclotrons and linear accelerators. Ultimate vacuum is 5×10^{-7}mm Hg at 25° C without cold baffles or traps.

A new data sheet describes the MCF series in detail. We would like to send you a copy, or to discuss any problem you have that might involve the creation, measurement, or use of high vacuum. Write ***Consolidated Vacuum Corporation, Rochester 3, N. Y.*** (a subsidiary of Consolidated Engineering Corporation, Pasadena, California).

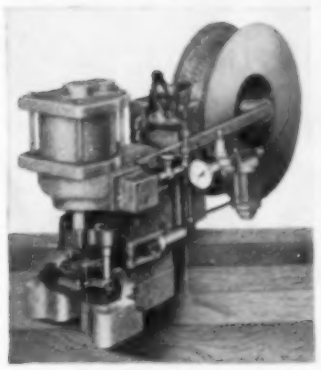
CVC

Consolidated Vacuum Corporation
Rochester 3, N. Y.
designers and manufacturers of high vacuum equipment
SALES OFFICES: Palo Alto, Calif. • Chicago, Ill. • Camden, N. J. • New York, N. Y.

If you write maker identify as IEN - 3087

If you write maker identify as IEN - 3088

FAST, COST-CUTTING TERMINAL ATTACHING on NEW "P-M" *advanced design*



COLD CRIMPING MACHINE

Advanced design of new P-M automatic terminal attaching machine provides many improvements that drastically reduce tool set-up time and production lag. Interchangeable rolling tools are quickly set up in special die-set fully accessible in machine, and removable for faster tool changing on bench. Extra die-sets keep tools set up for quick job change-over.

Using strip terminals in continuous form supplied on nonreturnable reels, the machine automatically crimps and cuts off in one operation to produce fast, efficient, economical terminations. Engineered for rugged, continuous operation. Requires minimum production space. Simple, quiet air pressure operation. Modern color scheme and design innovations promote operator acceptance and minimize operational fatigue.

Low priced for short or long runs, P-M machine is sold outright with set of rolling tools ready for operation. Illustrated catalog of standard strip terminals, with full specifications, available when requested on company letterhead.

PATTON - MacGUYER CO.
18 Virginia Avenue . . . Providence R. I.

If you write maker identify as IEN - 3089

FASTEST WAY TO LEARN WHAT'S NEW THE 1954 ASTE INDUSTRIAL EXPOSITION & CONFERENCES IN PHILADELPHIA APRIL 26-30 INCL.

Send for the free "ASTE show plan booklet" which gives all details on this important event. Drop us a line on your company letterhead.

Sponsored and Operated by
THE AMERICAN SOCIETY OF TOOL ENGINEERS
10700 PURITAN AVENUE, DETROIT 38, MICHIGAN

If you write maker identify as IEN - 3091

CASTER . . With sealed bearings that permit flushing out old lubricant

Source: BASSICK COMPANY
439 Howard Ave., Dept. IEN, Bridgeport 2, Conn.

No dirt, drag, drip

Construction of this new Series-3DH99 coaster includes a baffle ring to prevent entrance of dirt and water into the swivel bearing and a grease retainer that prevents loss of lubricant in the swivel due to vertical drainage. Wheel bearing seals exclude foreign matter and retain lubricant. Both seals are designed to permit flushing out old lubricant by introducing fresh grease through standard pressure fittings.

The raceways are case hardened. The swivel is double ball bearing design. Three sizes are equipped with 5, 6 and 8-in. wheels and composition treads. Load capacity ranges from 300 to 420 pounds. Overall height is 6½ to 9½ inches. The swivel design lists at $13 to $19.30. Matching rigid casters list at $9.60 to $15.10.

If you write maker identify as IEN - 3092

PAINTING . . Protective coating for masonry, metal, wood, glass

Source: BABBITT STEAM SPECIALTY CO.
Babbitt Square, Dept. IEN, New Bedford, Mass.

Supplied in range of colors

Formula 67 designates a new protective paint for spray or brush application on a clean metal or non-metallic surface. The film dries in air in about 20 minutes. It is resistant to attack by acids, corrosive vapors, alkalis, grease. It is recommended for use on equipment such as pumps, cars, tanks, pipe lines, ventilators subject to contact with acids or acid vapors. It is washable with soap and water. Packaging is in gallons to 55-gal. drums.

If you write maker identify as IEN - 3093

HEAT TREATING . . Electric furnace top loading design, to 2,500 deg. F.

Source: PERENY EQUIPMENT CO.
893 Chambers Road, Dept. IEN, Columbus 12, Ohio

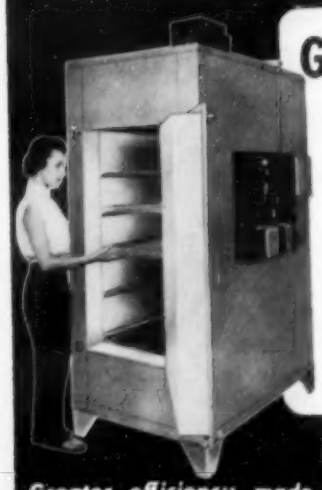
Mounts in floor

Work chamber in this new Model PT-2550 electric furnace measures 18 by 25 by 42 inches. Overall dimensions of the rectangular insulated housing are 48 by 53 by 82 inches. The cover that closes the top opening rides ball bearing wheels on an inclined track and is counterweighted. A voltage regulating 36-tap magnetic contactor is supplied. Atmosphere controls can be specified as well as any standard temperature control.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3094

CUT OVEN COSTS 2 WAYS!



Grieve-Hendry STANDARD CABINET OVENS

1. LOWER FIRST COST
Through Size Standardization.

2. LOWER OPERATING COSTS
Through reduced heat losses.

Greater efficiency made possible by THESE FEATURES . . .

- 20% more insulation.
- No metal-to-metal contact.
- Selective heat intensity control.
- Constructed for heavier loads and faster processing.

Designed to include the latest convenience features and safety devices.

Specialists in precise temperatures and programmed processing. We offer you engineering consultation on your oven requirements. Call or write.

Standard models to 1000° F.
$89.50 and up
Immediate delivery
Dealers inquiries invited

GRIEVE-HENDRY COMPANY, INC.
Export Dept.: 306 W. Washington Blvd., Chicago 6, Illinois
1811 W. Lake Street • Dept. IEN • Chicago 12, Ill.

If you write maker identify as IEN - 3095

. . . to help you find the right packing in a hurry

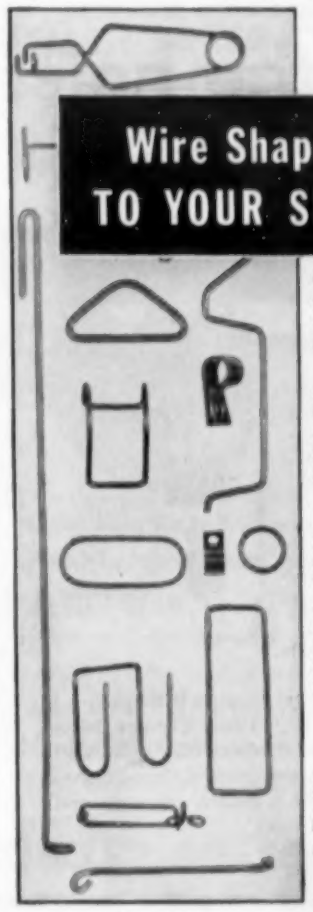
Why take chances with "any old packing" and run the risk of shutdowns and the expense of frequent replacements?

This handy new "packing selector" tells you at a glance the *right* Johns-Manville packing or gasket for practically any power plant application. Its recommendations are based on the experience of J-M engineers in solving packing problems and lowering packing costs in thousands of plants.

For your free copy, write Johns-Manville, Box 60, New York 16, N. Y. Ask for "Packings for the Power Plant."

Johns-Manville PACKINGS & GASKETS

If you write maker identify as IEN - 3096



Wire Shapes and Forms TO YOUR SPECIFICATIONS

● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

If you write maker identify as IEN - 3097

SAVE TIME • MANPOWER MACHINERY • MONEY

. . . with a **CLEMENTS-CADILLAC**

Save your equipment. Remove dirt, dust, grit, filings from every crack and crevice before they damage your machinery, decrease its efficiency. You'll reduce repairs, replacement, down-time.

Ask your mill supply dealer for a demonstration, or write us for information.

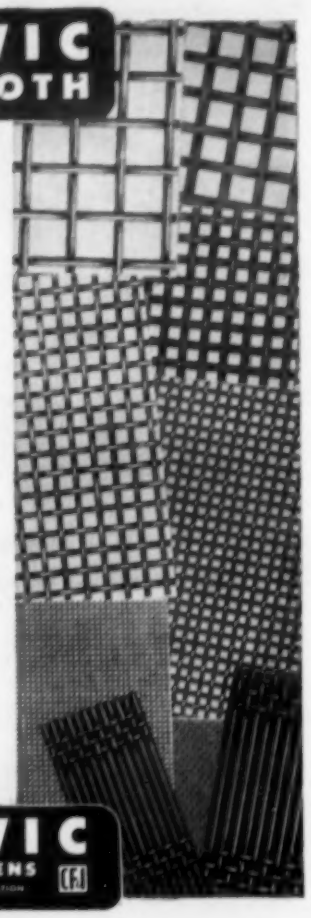
CLEMENTS Cadillac PORTABLE ELECTRIC
Combination Blower-Suction Cleaner
MADE IN 5 MODELS, ILLUSTRATED 1 H.P.

"Most Useful Tool in the Plant"

CLEMENTS-CADILLAC COMBINATION BLOWER SUCTION CLEANERS
CLEMENTS MFG. CO., 6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.
USED BY BUSINESS AND INDUSTRY FOR MORE THAN 44 YEARS

If you write maker identify as IEN - 3098

CAL-WIC WIRE CLOTH



meets all special job demands

Whatever your special job demands may be—filtering, screening, grading, cleaning, or any other type of processing — Cal-Wic Wire Cloth is available in the right weave, mesh or weight to give long-lasting dependable service.

To order, write or phone our nearest district sales office.

THE COLORADO FUEL AND IRON CORP.
Denver and Oakland

WICKWIRE SPENCER STEEL DIVISION
Atlanta • Boston • Buffalo • Chicago
Detroit • New Orleans • New York
Philadelphia

CAL-WIC
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

1250

If you write maker identify as IEN - 3099

Choose the hoist that fits the job!

Heavy Duty

SHEPARD NILES Hoist

Types: Lug Suspension, Hook Suspension, Base Type, Push Trolley, Geared Trolley, Motor-driven Trolley.
Controls: Pendant Rope, Push Button, Outrig, Remote.
Speeds: To meet your requirements.
Capacities: 500 to 40,000 lbs.

● It pays to choose the right hoist for your lifting job . . . the wrong choice can be costly! Let a Shepard Niles representative guide you in selecting the hoist that best suits your needs. He's a specialist in through-the-air handling . . . knows which model, capacity and controls will be right for your use.

Light Service

SHEPARD NILES *LIFT ABOUT-JR.*

Types: Lug Suspension, Hook Suspension, Push Trolley.
Controls: Single Speed, Push Button, Rope Operated.
Capacities: 250, 500, 1000, 2000 lbs.

CRANES: Capacity 1-450 Tons

HOISTS: Capacity 1-20 Tons

SHEPARD NILES
CRANE AND HOIST CORPORATION

MAIL COUPON

SHEPARD NILES Crane and Hoist Corp.
1036 Schuyler Ave., Montour Falls, N.Y.

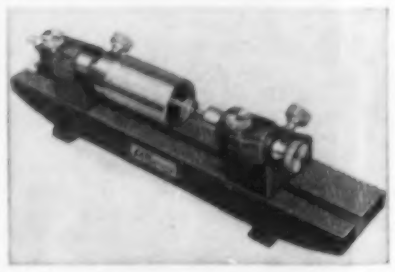
( ) *Please send me your new Lift About-Jr. Bulletin.*
( ) *Please send me your Shepard Niles Hoist Bulletin.*
( ) *Have a Shepard Niles representative call on me.*

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 3101

GAGE . . Bench center takes magnetic or standard indicator

Source: ACME INDUSTRIAL CO.
200 N. Laflin St., Dept. IEN, Chicago 7, Ill.



Weighs 19½ pounds

New center can be carried to a production machine or set up on an angle plate or surface plate. It takes work pieces to 13 in. in length and swings to 5 inches. Its flat surface is machined and checked within 0.0005 in. for maximum deviation from true flat. Horizontal and vertical accuracy is maintained for the length of the 18-in. bed. Adjustable heads and thumb screws assist in operation. Male and female retractable centers and fixed centers with various female chamfer capacities are available to order. Indicator holders also can be supplied.

If you write maker identify as IEN - 3102

LADDERS . . Caster mounted units grip the floor when weight is imposed

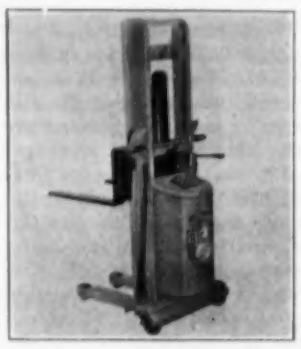
Source: PRECISION EQUIPMENT CO.
3714 N. Milwaukee Ave., Dept. IEN, Chicago 41, Ill.

Protects workers

Four spring supported casters hold this new line of ladders from the floor, so they can be moved easily when there is no load upon them. The weight of an individual on any step compresses the springs and brings floor gripping rubber feet into contact.

The ladder is made of ¾-in. aluminum finished steel tube and expanded steel step plates. It is available with 2, 3, 4 and 6 steps. The two larger units are equipped with handrails and can be specified with a wire mesh basket measuring 12 by 15 by 8 inches. List price is $26 to $93.50. The basket adds $2.50.

If you write maker identify as IEN - 3103



Enclosed electrical equipment, spark proof wheels, conductive tires are available in the 12-model line of explosion proof Big Joe electrically operated hydraulic lift trucks. Each truck carries Underwriters' Laboratories rating for Class 1 Group D or Class 2 Group E, F, and G atmospheres. Maker is Big Joe Mfg. Co., 900 W. Jackson Bldg., Dept. IEN, Chicago 7, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3104

A PAID NEWS ADVERTISEMENT BY JABSCO PUMP CO.

JABSCO SELF-PRIMING PUMP AND CLUTCH UNITS

Built-on Clutch
Fingertip Controlled

Jabsco's multi-purpose Pump and Clutch Units are available for immediate delivery. Model 2300 (1" pipe size), and Model 2500 (1¼" pipe size) are small, compact units having the easy-operating clutch built into the pump, eliminating the need for a separate clutch base. Friction cone type clutch can be operated by handle, lever or cable. Units are equipped with New Departure sealed and pre-lubricated ball bearings in both pump and clutch. These compact units may be mounted at any angle desired, and driven by an A or B Section V-belt. Jabsco Pumps are completely self-priming, with dry suction lifts approaching 20'; when primed, as high as 25', and no foot valve is required. The exclusive Jabsco "camflexed" Neoprene Impeller is the only moving part in the pumps. Impeller is easily replaced without disconnecting piping or drive belt. Jabscos are economical, low in first cost, and trouble and maintenance free, even under continuous rugged operation. Liquids are efficiently pumped at low or high speed, in either direction. Model 2300 delivers 1680 GPH and Model 2500 delivers 3300 GPH at 10' head, 1750 RPM. For complete information, write **Jabsco Pump Company,** 2031 North Lincoln Street, Burbank, California.

If you write maker identify as IEN - 3105

Save! ON SWITCHES

FOR APPLIANCES, INSTRUMENTS, TOYS, RADIOS, TV SETS, SMALL MOTORS, etc.

Low-priced Stackpole line switches in 22 different styles provide practically any needed switching arrangement. Types rated from .5 to 3 amperes. Underwriters approved. Write for Switch Bulletin RC-9B.

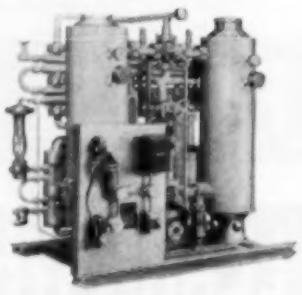
Electronic Components Division
STACKPOLE CARBON CO., *St. Marys, Pa.*

STACKPOLE

Fixed and Variable Resistors • Iron Cores • Ceramag® ferromagnetic Cores • Molded Coil Forms • Low-Value Capacitors, etc.

If you write maker identify as IEN - 3106

ELIMINATE MOISTURE PROBLEMS with this Packaged Dehydration Unit



Pritchard HYDRYERS* have wide acceptance among critical buyers as the dependable quality unit for efficient drying of air or other gases in industrial, processing and laboratory installations.
Having pioneered the development of an efficient packaged dryer, Pritchard has the experience which assures you that a HYDRYER will meet your most exacting performance requirements. Standard packaged units reduce dew points to minus (-) 40° F. Custom-designed units can be furnished to meet extreme conditions or special requirements. For complete information, write for Pritchard's new HYDRYER bulletin 16.0.081.

**Registered Trade Name*

Industry's Partner for Progress

COOLING TOWERS
SPECIALIZED HEAT EXCHANGERS
GAS & AIR TREATING EQUIPMENT

J.F. Pritchard Co.
OF CALIFORNIA
A DIVISION OF J. F. PRITCHARD & CO.
Dept. 369, 210 West 10th Street
Kansas City 5, Mo.

Representatives in Principal Cities From Coast to Coast

If you write maker identify as IEN - 3107

FAMOUS "CHEM-BOARD"* **CONVOY** TOTE BOXES

*Chemically Hardened Corrugated Board

SOLD THROUGH LOCAL INDUSTRIAL DISTRIBUTORS

Cost—weigh—50% to 60% less than steel. A wide range of sizes in standard and custom made NESTING, STACKING, VERTICAL TOTE BOXES. Write for complete information, prices, name of distributor in your area.

CONVOY RECORD STORAGE FILES
Sold Only by YOUR LOCAL STATIONER

Used by most famous names in industry and businesses of all kinds. CONVOY "CHEM-BOARD" files for record storage made in letter, legal, and 12 other sizes. Stack to ceiling, mate together. Call your local stationer or write for name of stationer nearest to serve you.

CONVOY, INC.
Canton 6, Ohio
P. O. Station B, Box 216-i

If you write maker identify as IEN - 3108

NEW Aerovent Portable Utility FANS

for product and personnel cooling • drying, exhausting and ventilating

Full 180° high-velocity air discharge. Mounts on ceilings, walls or floors. Heavy-duty rolled steel construction with expanded metal guards. Meets all safety standards. Available in sizes 16" to 36" for capacities to 20450 CFM

other models for every air-moving requirement

All Aerovent Fans are rated in accordance with the Standard Test Code and U.S.D.C. Comm. Std. CS178-51.

Ask for free folder P-50!

Aerovent Fan Company, Inc.
Ash and Brown Streets Piqua, Ohio

If you write maker identify as IEN - 3109

Headquarters for

ALMCO Supersheen SPEED FINISHING

BARREL FINISHING COMPOUNDS

40 DIFFERENT COMPOUNDS

Almco Supersheen's large family of barrel finishing compounds is made up of many separate compounds—each for a specific type of barrel finishing process.

Now it is possible for you to select an Almco compound that is developed for a specific metal and will produce much superior results to that obtained from ordinary general purpose compounds.

CONSTANT RESEARCH AND DEVELOPMENT

Research and development work on various types of chemical compounds is continually underway.

Special compounds are designed and developed as custom items for specific uses. A large stock of Supersheen special compounds is always on hand and they are often recommended in cases where they will perform a certain operation in a better manner than the standard compound.

Write for FREE CATALOG

52 pages of money-saving finishing facts. Scores of "before and after" pictures. Learn the latest on new compounds, new finishing equipment. Send for your catalog today.

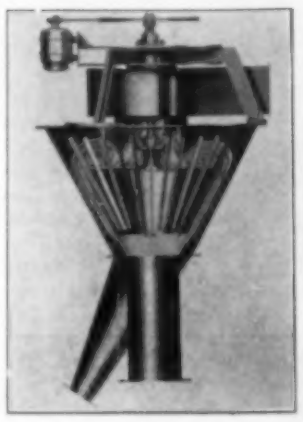
ALMCO Supersheen

AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT - MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

If you write maker identify as IEN - 3111

SEPARATING . . Dry classifier delivers only fines in air-dust stream

Source: HARDINGE COMPANY
240 Arch St., Dept. IEN, York, Pa.



Bulletin AH-449

Gyrotor trade names a new classifier for use in continuous separation of coarse and fine airborne particles. It applies in closed circuit with a pulverizing machine or as a self-contained sizing unit for any moving stream of air-solids mixture. It can be adjusted to determine the particle size that will be delivered by altering the rotor speed.

The machine is basically an inverted truncated cone shell with a motor-driven bladed rotor revolving on a vertical axis inside the shell. The mixture of coarse and fine airborne material is fed in from the bottom of the cone. It passes upward through the annular space occupied by the rotating blades. Oversize particles are mostly removed by impact with the blades to drop out and slide down to the discharge at the base of the shell.

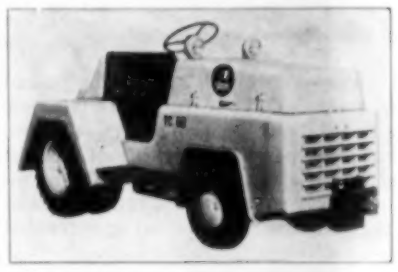
Oversize material not removed by the impact action does drop out of the air stream in the eddy current that occurs above the top plate of the rotor. Centrifugal action removes these remaining large particles to the inner face of the shell where they slide down to the discharge at the base.

Fines are picked up from above the rotor for delivery through the centrifugal blower mounted on the rotor shaft at the top of the assembly. The equipment is available to order for specified application.

If you write maker identify as IEN - 3112

TRUCK . . Engine driven tractor for use in plants, yards and on docks

Source: FRANK G. HOUCH COMPANY
841 7th St., Dept. IEN, Libertyville, Ill.



Ask for specifications

Draw bar pull rates 3 ton for this new 1954 model of the Type TC-60 Payloader tractor. The machine is equipped with a dual range reversing transmission and double acting torque converter drive.

Construction includes a solenoid operated vacuum actuated tail shaft brake to stop rotation of the transmission while gears are being shifted. The brake is actuated by a push button in the top of the shift lever. The torque converter provides multiplication when it is required and then reverts to fluid drive for light load requirements. It is self-cooled design. The operator's seat is adjustable. The gasoline filler cap is mounted on the side.

Attachments and accessories, available to order, include quick detachable couplings, enclosed cab, hydraulically driven 4½-ton winch, electrically controlled snow plow, headlights and backing lights.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3113

IF YOUR EXPOSURE IS HIGHLY IRRITATING SOLVENTS

PLY No. 9 GEL
PROTECTS AGAINST DERMATITIS!

It's a proven fact! Actual tests show PLY No. 9 Gel effective against solvents and resins causing dread dermatitis. The gel is easy to apply—invisible on the skin—washes off quickly—keeps employee's mind free from worry of contracting the disease.

WRITE FOR THIS VALUABLE BOOK!

"The Answer To Industrial Dermatitis"

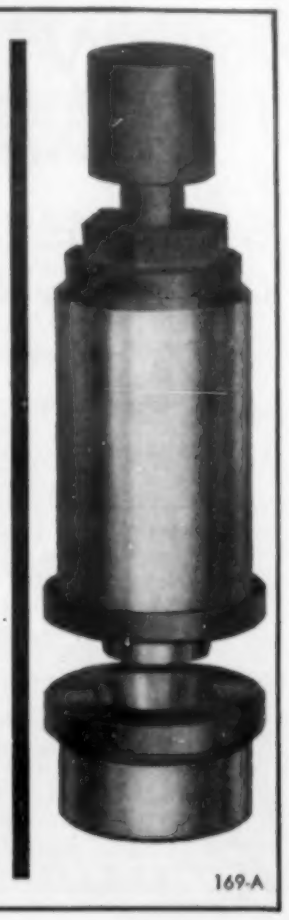
THE MILBURN CO., Detroit 7, Mich.
The Standard of Perfection in Protection

If you write maker identify as IEN - 3114

STANDARDIZED UNIVERSAL INDEX PLUNGERS

save time, save money

Save the time and expense of designing and machining special plungers for multi-station tools with Universal Index Plungers. They greatly simplify jig and fixture manufacture because plunger body and bushing have same diameter—all holes can be bored with same tool, often in same setting. Soft pin knob, hardened and ground locating bushing, plunger and plunger bushing. Straight and Taper Plungers in standard sizes, complete, ready for installation at approximately ¼ the cost of specially made plungers.



UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

169-A

If you write maker identify as IEN - 3115

MUELLER BRASS CO.

600 SERIES BEARING ALLOYS
FORGINGS • ROD • SCREW MACHINE PRODUCTS
proving their quality throughout American industry

Mueller Brass Co. "600" series bearing bronzes are lightweight, high strength copper-zinc base alloys with excellent bearing and mechanical properties, non-galling and non-seizing characteristics and good resistance to corrosion. There are six members of the "600" series . . . one for every purpose. Write today for complete information about the MUELLER BRASS CO. "600" series alloys for forgings, rod or screw machine products.

MUELLER BRASS CO. 119-A
PORT HURON 26, MICHIGAN

If you write maker identify as IEN - 3116

THIS DOCKBOARD IS 5 YEARS OLD — *and still going strong!*

When this company bought this Magcoa Magnesium Dockboard back in 1948, it made an investment in safe, light-weight, heavy-duty, *permanent* equipment. The first cost was the only cost.

How about you? Are you still risking workers, lift trucks and loads on a dangerous, makeshift bridgeplate? Replacing one beat-up, worn-out piece of plate with another one that really isn't any better? Why keep on paying and paying for heavy-metal plate never intended for that use, even by the companies that sell it? As a matter of fact, many of them were among the first to switch to safe, long-lasting Magcoa Dockboards—the line with more in-use service than all competitive equipment combined.

But why wait? Get the facts . . . contained in the free new Magcoa *Dockboard Facts File.* And be sure to look into the new Magcoa Portable Yard Ramp: a rugged, high-speed loading dock . . . where and when you want it. Write today.

FACTS FILE

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

If you write maker identify as IEN - 3117

NEW! Rapistan® SEALED CASTER

at 1/3 less cost than ordinary non-sealed casters!

5200 Series Rapistan Sealed Caster with 6" Sealed MB Demountable Wheel.

Now, for the first time, this revolutionary Rapistan development gives you a heavy-duty cold-forged *sealed* caster at *1/3 less cost than ordinary leading non-sealed casters!* Save in longer caster life, improved performance, lower maintenance. Dirt, acids, alkalis, brines, other chemicals are *sealed out* of coin-hardened raceways. Ask your Rapistan distributor to show you the comparative service chart, or write direct.

YOURS FREE! *Write for handbook describing Rapistan casters including new 5200 Series.*

The RAPIDS-STANDARD COMPANY, Inc.
279 Rapistan Building • Grand Rapids 2, Michigan

Rapistan® FASTEST GROWING NAME IN CASTERS

If you write maker identify as IEN - 3118

The "Signature" is the finishing touch on your product!

Ever stop to think that your name plate is really the "signature" on your product? Its appearance should reflect your pride; its durability should match the quality of your product. Let us help you create such a "signature." Our skilled craftsmen, long experience and modern equipment insure finest results. Send a rough sketch or blue print for design suggestion and quotation.

Write now for "Etched or Lithographed Metal Products", with full color examples of name and instruction plates.

CHICAGO THRIFT-ETCHING CORPORATION
1555 N. SHEFFIELD AVE., CHICAGO 22, ILL., DEPT. F
SUBSIDIARY OF DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

If you write maker identify as IEN - 3119

Brown Boggs Foundry & Machine Co., Ltd., Hamilton, Canada, manufacturers of this 200-ton press, required a v-belt that would give vibrationless full power delivery . . . that could be installed quickly and easily. Here's why they selected Veelos:

"...for best operating condition ...for the user's convenience"* Brown Boggs picked Veelos v-belt

**"We feel that our own factory assembly has put this Press in the best operating condition. To eliminate the necessity for dismantling any part of the equipment, and for the user's convenience in changing belts, we have equipped the drive with Veelos V-Belting."*

Veelos is known as Veelink outside the United States.

VEELOS THE LINK V-BELT

Get the full story of Veelos—write today for your free copy of the Veelos Data Book.

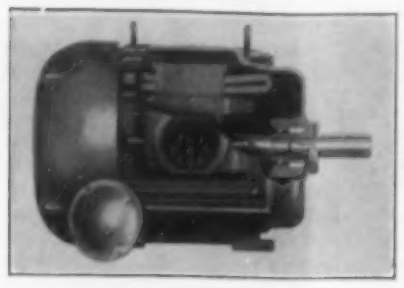
MANHEIM MANUFACTURING & BELTING CO.
651 Manheim St., Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 3120

MOTOR . . Totally enclosed ac., fan cooled, to exclude Taconite dust

Source: ELLIOTT COMPANY
Kealey St., Dept. IEN, Jeannette, Pa.



Keeps out magnetic dust

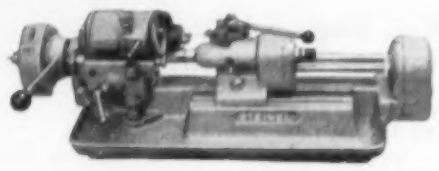
Illustrated is special modification of the company's Type-CFC Sealedpower totally enclosed fan cooled induction motor for particular use in ore refining plants, employing the Taconite beneficiation process, where crushing, mixing and drying operations produce an atmosphere burdened with fine magnetic dust. The motor has been run for many hours in test operation in a sealed enclosure containing a heavy concentration of the dust.

Construction includes non-ferrous slingers and bushings, a heavy fibrous grease seal, pre-lubricated and sealed ball bearings, close tolerance fit between bearing brackets and frame, leads sealed in with air hardening plastic and self-cleaning action provided by the fan which directs the cooling air along the heat radiating fins. There is no outer casing under which dust can collect and any that does remain on the exterior motor surfaces can be brushed off during a shutdown.

If you write maker identify as IEN - 3121

BURNISHING . . Finishing machine for spindle and pivot bearing surfaces

Source: MOREY MACHINERY CO.
410 Broome St., Dept. IEN, New York 13, N. Y.



The Steinel machine

Model SR2n for work diameters from 0.019 to 0.078 in. and Model SR3n with a range from 0.039 to 0.314 in. are two new machines to burnish the bearing surfaces on pivots, spindles, drive journals. The operation is performed with tool steel or tungsten carbide discs mounted on the head stock of the lathe-like machine. Work is held in a chuck in the tailstock. The chuck is power driven. The tailstock is advanced or retracted along its ways by means of a lever.

If you write maker identify as IEN - 3122

Vibrin polyester resin produced by Naugatuck Chemical Division of United States Rubber Co., 1230 Sixth Ave., Dept. IEN, New York 20, N. Y., is being employed in manufacture of doors for use on insulated trucks. The door is made by molding a pan-like section. The pan is then filled with insulation and faced with a sheet of aluminum on which the hardware is attached. Door frames are made of the same reinforced plastic construction. The finished door features light weight. It will not freeze in closed position.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3123

You Get Economical, Quick, Secure Fastening with Townsend Tapping Screws

You enjoy the economy of quality when you use Townsend tapping screws. They are made to provide an easy method of securely fastening metal, plastics, wood, asbestos and compositions with efficiency.

The use of Townsend thread forming screws eliminates costly tapping operations as the precision-rolled thread forms a mating thread when the screw is driven into the material. They are widely used in sheet metal, castings, and a variety of non-metallic materials. They may be removed and replaced without impairment of their holding power.

Townsend tapping screws are available in the types shown here in a variety of head styles with slotted or Phillips recessed and hex heads.

As representatives of "The Fastening Authority" Townsend engineers can draw upon 138 years of accumulated experience in wire drawing and cold forming to help solve your fastening problems. You can depend upon Townsend to give you excellent service in any quantity. For additional information write today for Tapping Screw Bulletin TL-88.

Townsend Company
Established 1816
NEW BRIGHTON, PENNSYLVANIA

If you write maker identify as IEN - 3124

NEW INDUSTRIAL HUMIDIFIER

BAHNSON TYPE E Self-Contained Unit Humidifier

Requires only water supply and electrical connection

NOTE THESE FEATURES!

- **HIGH CAPACITY**—Evaporates 3 gallons per hour with 1/4 HP motor.
- **AUTOMATICALLY CONTROLLED** at any desired relative humidity.
- **SIMPLE TO INSTALL**—Just uncrate and suspend from ceiling.
- **ELECTRIC MOTORS** for all common current characteristics.
- **WATER SUPPLY** connection for 1/4" tube or 1/8" pipe provided.
- **NEEDS NO** pump, duct, compressed air, steam, drain or floor space.
- **EFFICIENT** centrifugal atomization of ordinary city water.
- **TWO MODELS**, 1/4 HP for high capacity, 1/8 HP for small rooms.

FOR COMPLETE HUMIDIFICATION SYSTEMS, FOR BOOSTING, FOR SPOT HUMIDIFICATION, FOR LABORATORIES

FOR TRULY DEPENDABLE LOW-COST HUMIDIFICATION **Bahnson Company** ENGINEERS AND MANUFACTURERS
WINSTON-SALEM, N. C.

If you write maker identify as IEN - 3125

Hydraulic Pumps

HYDRAULIC PUMPS by Eastern do the work of giants. They are precision-made for highest volumetric efficiency. Volumes from .05 to 10 gpm against pressures to 200 psi. FLUID MOTORS develop to 6 H.P. Low starting torque, compact design. *Write for HYDRAULIC PUMP CATALOG 800-B*

Eastern INDUSTRIES, INC.
296 Elm St., New Haven, Conn.

If you write maker identify as IEN - 3126

PAINT OVER RUST WITH TYGORUST!

"the 'no-prep' vinyl primer"

- minimizes surface preparation
- dries hard in minutes
- goes under any type finish
- provides excellent adhesion
- inhibits rust formation

TYGORUST is a new and unique primer specifically developed to permit the use of TYGON and other vinyl based coatings on rusted ferrous metals. Its outstanding features include easy application — fast drying — high coverage — excellent adhesion to wet or dry rusted steel, wood, concrete, or previously painted surfaces — excellent adhesion for vinyl, nitrocellulose, alkyd, oleoresinous, or bituminous finishes—and, real resistance to rust formation.

359C

Write for details today — try TYGORUST tomorrow!

U. S. STONEWARE CO.
Akron 9, Ohio

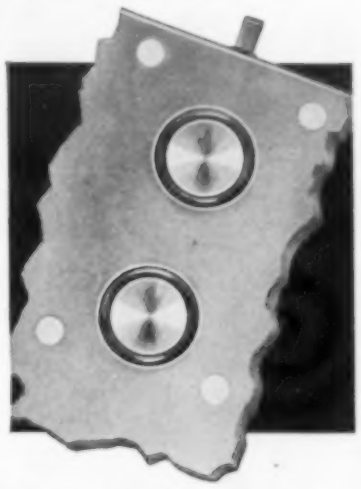
If you write maker identify as IEN - 3127

New HARTWELL

Push Button

Trigger Action

FLUSH LATCH



MODEL H-2

• A new latch development for modern equipment. Combines the desirable features of push button operation with the positive simplicity of trigger action in a small, rugged, lightweight yet inexpensive flush latch.

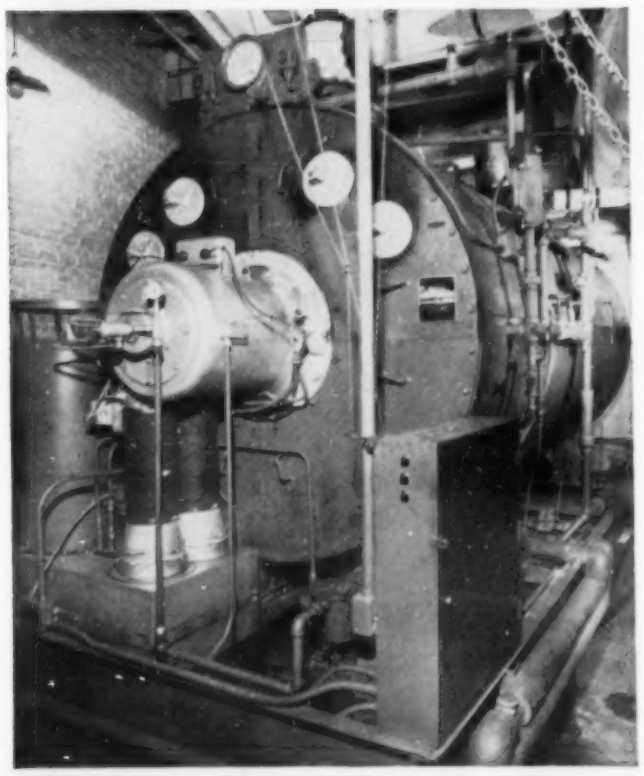
Available in many offset combinations for various door and frame thickness arrangements. Standard with or without gaskets in stainless steel or cadmium plated cold rolled steel.

Write for new 1954 Flush Latch Catalog

HARTWELL COMPANY | *Manufacturer of Flush Latches and Hinges, Fittings and Cable Terminals*
9035 Venice Blvd., Los Angeles 34, Calif.

If you write maker identify as IEN - 3128

Steam Costs Go DOWN where *Powermasters* Go In



For Example:

A large commercial laundry cut its boiler fuel bill 12% by replacing a fire-box boiler with a modern *Powermaster* Packaged Automatic Boiler. Even with 19% more business, boiler room operating costs are now only 4.2% of sales as compared to over 5% with the old boiler. Low-cost space-saving installation, completely automatic operation, higher quality steam, much less attention and maintenance, and smokeless combustion are other advantages gained.

Have You Checked Your Steam Costs Lately?

Many kinds of industrial plants, food processors, schools, institutions, public buildings, laundries, housing projects, and utilities are also enjoying the cost-saving advantages of *Powermaster* boilers.

SEND FOR NEW BULLETIN describing and illustrating all cost-saving advantages of *Powermaster* units.

O&S *Powermaster*®

PACKAGED AUTOMATIC BOILERS

Sizes to 500 HP; pressures to 250 psi.

Orr & Sembower, Inc.
Morgantown Road, Reading, Pa.

If you write maker identify as IEN - 3130

TIMING . . Cam operated switch mounts to turn with a rotating shaft

Source: FARMER ELECTRIC CO.
21 Mossfield Road, Dept. IEN, Waban 68, Mass.

Single pole single throw

Rototimer trade names a new timing switch that can be adjusted by turning a knob in either direction through a complete circle from any starting position. The switch can be set to operate at any point in the rotation of the drive shaft to which it is connected. The adjustment rotates a 25 to 1 worm gear that will hold the position to which it is set. Turning a screw adjusts duration of open or closed circuit time. A locking screw holds this setting.

A set of automotive distributor points acts as the switch element and is actuated by a steel cam once for each revolution of the drive shaft. The cam is available for either normally opened or normally closed circuits. Contact rating is 1 amp. on 110-volt ac. Current is fed to the contacts by brushes and slip rings. Screw terminals and a cable clamp are provided in the housing.

The rotating parts are mounted on ball bearings with sealed-in lubricant. The ½-in. shaft is fitted with a keyway. The housing is made of cast aluminum. Overall dimensions are about 6 by 5½ by 5 inches.

If you write maker identify as IEN - 3131

CLEANING . . Rotary brush machine to scrub, sand, wax and polish a floor

Source: ADVANCE FLOOR MACHINE CO.
2613 4th St., S. E., Dept. IEN, Minneapolis 14, Minn.

Bulletin, "Speedboy"

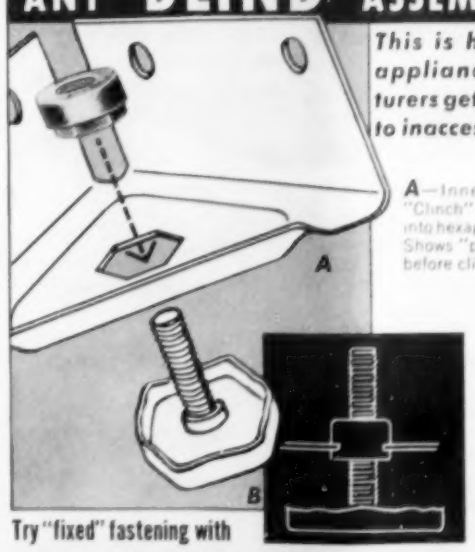
Silent-Flo trade names new design of toothed belt drive that is available on the company's Speedboy line of rotary brush machines. The drive employs the Gilmer neoprene covered cable reinforced belt with non-metallic teeth that mesh with the teeth on wheels in the drive mechanism. Drive is free from metal to metal contact and is silent as a result. The machine is available for wet or dry operation and in five sizes with 12 to 19-in. brush spread. Rotating speed in each case is at 177 rpm.

Control centers at a dual safety switch on the handle. Equipment includes a 40-ft. length of extension cord and plug for the 110 or 220-volt 60-cycle ac. motor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3132

ANY "BLIND" ASSEMBLIES?



This is how leading appliance manufacturers get fasteners into inaccessible places.

A—Inner View. GRIPCO "Clinch" Nut ready to insert into hexagonal hole in metal. Shows "pilot" and hex hole before clinching.

B—Cross-Section view after pilot has been clinched and bolt inserted. Can be locked at any point. (Non-locking nut can be supplied if preferred)

Try "fixed" fastening with

GRIPCO "CLINCH" NUTS

Do you have any application on which fastening must be made from a hard-to-get-at point; or do you need additional threading depth for applying bolts to thin metals? Investigate this method of firmly affixing GRIPCO "Clinch" Nut to the work so it is already in position when bolt is applied.

375

GRIP NUT COMPANY
310-S S. Michigan Ave., Chicago 4, Ill.

Write for samples, stating types and sizes of nuts used.

If you write maker identify as IEN - 3133

BALL BUSHING

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A or Low-Cost Series B BALL BUSHINGS.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and performance with BALL BUSHINGS! Now manufactured for ¼", ½", ¾", 1", 1⅛", 2" and 2½" shaft diameters.

THOMSON INDUSTRIES, INC.
Dept. I, MANHASSET, NEW YORK

Write for descriptive literature and the name of our representative in your city.

The BALL BEARING for your

LINEAR MOTIONS

LOW FRICTION • LOW MAINTENANCE
ELIMINATES BINDING AND CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LONG LIFE • LASTING ALIGNMENT

Also manufacturers of NYLINED Bearings — DuPont NYLON within a metal sleeve — for rotation and reciprocation.

PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS - A MAJOR IMPROVEMENT AT A MINOR COST

If you write maker identify as IEN - 3134

Now FOR SMALL FLOW FILTRATION

THE

Delpark *Junior*

Write for DELPARK JUNIOR BULLETIN

Designed for coolant filtration on grinders, hobbers, shavers, cutters, hones and lappers with small coolant flows. Filtration capacity on cutting oils ¼ to 1 g.p.m., soluble oils ½ to 1½ g.p.m.

Permits closer tolerance and finish requirements, greater machine efficiency and production, fewer rejects. Assures longer wheel and tool life, lowers coolant temperature. Requires no floor space. Disposable filter tray replaced in seconds. Allows cleaner working conditions.

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVE. LEBANON, INDIANA

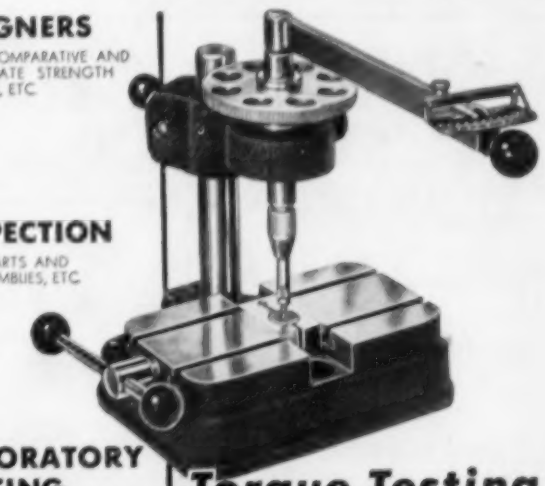
If you write maker identify as IEN - 3135

DESIGNERS for COMPARATIVE AND ULTIMATE STRENGTH TESTS, ETC.

INSPECTION of PARTS AND ASSEMBLIES, ETC.

LABORATORY TESTING of SCREWS, SOCKETS, TAPS, LOCK NUTS, DRIVING BITS, HAIR SPRINGS, ETC.

PRODUCTION QUALITY CONTROL for DELICATE OPERATIONS, ASSEMBLY OF FRAGILE MECHANISMS OR INSTRUMENTS, FOR FASTENERS IN PLASTICS AND LIGHT METALS.



Torque Testing FIXTURE

A universal fixture with 1000 uses. Holds driver in accurate alignment; in instrument bearings. Provides rapid engagement with test sample...torque is applied and measured with Sturtevant Torque Wrench.

Model TTF¼ Capacity 0-200 in. lbs.
Model TTF½ Capacity 0-150 ft. lbs.

Write for Bulletin TF

PA. STURTEVANT CO. ADDISON QUALITY ILLINOIS

If you write maker identify as IEN - 3136

MR. PRODUCTION FOREMAN:

YOU, TOO, WILL BE ASKED THIS QUESTION SOONER OR LATER, BETTER CHECK UP BEFORE IT'S TOO LATE!
WE'LL SEND YOU COMPLETE INFORMATION AND PRICES VIA RETURN AIR MAIL!
Phone, wire or write us RIGHT NOW!

Severance TOOL INDUSTRIES INC.
740 Iowa Avenue, Saginaw, Michigan

If you write maker identify as IEN - 3137

Material flow problems are our business. PneuBin is designed to aid in the evacuation of your bins through the principle of "positive displacement." We move the bin contents . . . not the bin.

The PneuBin unit consists of a steel-backed neoprene panel, mounted on the inside wall of your bin. By the pneumatic inflation and deflation of the panel, the bin contents are displaced and disturbed to activation. After the diaphragm has deflated, the air control unit (operating off the regular plant air supply) starts another cycle of inflation and deflation. The process continues automatically at whatever frequency is set on the air controller.

Because the neoprene panel is resistant to oils and most chemicals and is also thick and tough enough to withstand severe abrasive service, PneuBin is applicable to most any bin flow problem.

Send for "Flow Stoppage Report" and free literature. PneuBin engineers will gladly make recommendations, with no obligations on your part.

PneuBin is a product of
GEROTOR MAY CORP. • BALTIMORE 3, MD.

Pneu Bin

Manufacturers of **GEROTOR**
HYDRAULIC PUMPS & MOTORS

If you write maker identify as IEN - 3138

ECONOMIZE with Morton . . . FIXTURE CLAMP and COMPONENTS

- IMMEDIATE DELIVERY
- LARGEST ASSORTMENT OF SIZES AND TYPES IN THE INDUSTRY.
- ASSURED QUALITY and SERVICE.

WRITE TODAY
For our Catalog showing our complete line and including full size templates of each Fixture Clamp and Component . . . Save Tool and Designing Costs.

BE SURE TO VISIT US AT ASTE SHOW BOOTH 113

MORTON MACHINE WORKS
2425 Wolcott St., Detroit 20, Mich.

If you write maker identify as IEN - 3139

PACKAGING . . Corrugated container for bolts, nuts, nails, heavy products

Source: HINDE & DAUCH PAPER CO.
337 Decatur St., Dept. IEN, Sandusky, Ohio

Weather proof design

Hevi-Duty designates a new corrugated paper shipping container that has been developed as a replacement for wooden kegs. The company has applied for patent on the new design. Three other companies have been licensed to produce it. It features low original cost, minimum weight for the required strength, minimum warehouse space.

Identification and other information can be printed on the flat sides. A paliet, that will hold 21 standard wooden kegs, can be used to store and transport 30 of the new boxes, each of which holds the same weight as one of the kegs.

The box is shipped to the user in two flat sheets, cut and scored. One folds to become the bottom. The other becomes the telescoping top. One operator, working on a standard horizontal arm stitcher, can assemble 120 boxes per hour.

If you write maker identify as IEN - 3140

HEATING . . Electric hot plate provides temperature to 930 deg. F.

Source: THERMO ELECTRIC MFG. CO.
482 Huff St., Dept. IEN, Dubuque, Iowa

List is $33.50

The top surface of this new Temco hot plate measures 9 by 9 inches. It is made of cast iron and is fitted on its underside with a refractory plate into which the nickel chromium alloy heating element is embedded. The plate is mounted on a double section housing separated by a Marinite insulating plate to keep the bottom section cool. Ventilating channels are provided on all four sides directly beneath the top and also at the bottom.

Control is by a four-heat switch for temperature from 400 to 930 deg. F. The plate is available for operation on 110 or 220-volt ac. to meet power-supply requirements.

If you write maker identify as IEN - 3141

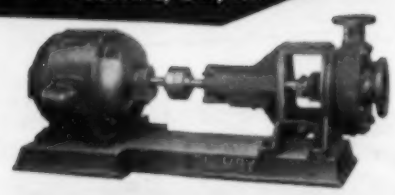
Predetermined pressure, in a range between 20 in. of water and 25 lb., can be set on a new instrument calibrator to check the operation of pneumatically operated instruments in the field and in the plant. The new test unit operates from a 35-lb. air source. It performs the function of an air loader. Manufacturer is Republic Flow Meters Co., 2242 Diversey Parkway, Dept. IEN, Chicago 47, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3142

WARREN-QUIMBY for Pumping

- Water
- Condensate
- Solvents
- Brines
- Caustics
- Acids
- Gasoline, Oils, etc.
- Organic Liquids
- Hydrocarbons



Check These Design Advantages

- Extra heavy shaft insures minimum deflection.
- Split packing gland with swing bolts permits easy replacement of packing.
- Clear-view bracket allows easy access to stuffing box.
- Modified Francis type impeller for high efficiency and low suction loss.
- Renewable case wearing rings at both sides of impeller.
- Extra deep stuffing box; minimum of seven packing rings.
- Renewable shaft sleeve, keyed to shaft.
- Support footing arranged at center of load.
- Heavy duty, double row bearing.

Combined Features Result in Long Life and Low Maintenance

Send for Bulletin 214

IEN 11

WARREN PUMPS
WARREN STEAM PUMP COMPANY, INC., WARREN, MASSACHUSETTS

If you write maker identify as IEN - 3143

Sure! **Turner can furnish ordinary 3 or 4 speed transmissions — BUT . . . Turner can ALSO furnish 6 or 9 speeds for AS LITTLE AS $10 to $20 ADDITIONAL . . .**

Now, for slight added cost you can have 6 or 9 speeds at the "twist of a wrist." Models range from fractional to 60 H.P. Wide range of applications on machine tools as well as other equipment. Write for specification and descriptive catalog.

See your dealer or write for further details

TURNER 3R3 UNI-REDUCER
New simplified speed reducer mounts on motor shaft with a torque arm to frame or base. Fits standard motors 1 to 5 H. P., 1800 RPM; 1 at 3 H.P. 1200 RPM. Reduction ratio 3.04 to 1. Write for information.

TURNER UNI-DRIVE Company
3479 Terrace Street Kansas City 8, Missouri

If you write maker identify as IEN - 3144

Lepel's 3 new LOW COST • PORTABLE HIGH FREQUENCY *Induction* **HEATING UNITS**

Ideal for . . . .

- Production Heating of small parts
- Educational Institutions
- Research Laboratories
- Machine Shops
- Tool Rooms

MODEL T-2½-1 Electronic Tube Operated $1620. f.o.b. factory

MODEL 2 KW Spark Gap Operated $870. f.o.b. factory

MODEL T-1 Electronic Tube Operated $885. f.o.b. factory

HARDENING
MELTING • BRAZING
ANNEALING • SOLDERING

The Lepel line of induction heating units represents the most advanced thought in the field of electronics as well as the most practical and efficient source of heat yet developed for industrial heating. With a background of half a century of pioneering electrical and metallurgical experience, the name Lepel has become the symbol of induction heating equipment embodying the highest standards of engineering achievement, dependable low cost operation and safety.

Amazing in its speed, Lepel equipment reduces the time required for hardening, annealing, stress relieving, brazing, soldering and melting from minutes to seconds. It performs these operations with a degree of precision and uniformity rarely attained through other processes.

LEPEL Electronic Tube GENERATORS available from 1 kw. to 100 kw.
LEPEL Spark Gap CONVERTERS available from 2 kw. to 30 kw.

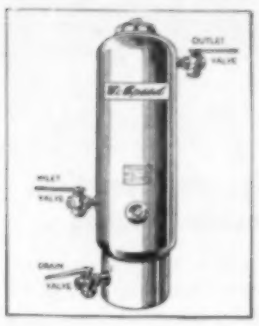
WRITE FOR THE NEW LEPEL CATALOG . . . 36 illustrated pages packed with valuable information on high frequency induction heating.

All Lepel equipment is certified to comply with the requirements of the FCC.

LEPEL HIGH FREQUENCY LABORATORIES, INC.
55th STREET and 37th AVENUE, WOODSIDE 77, NEW YORK CITY, N. Y.

If you write maker identify as IEN - 3146

DRY, CLEAN, compressed air (AT VERY LOW COST) rendered by unique Dehumidifier-Filter



A unique and simplified process has been developed that not only renders compressed air thoroughly dry, clean and safe, but performs effectively at unusually low cost. Tested and proven over a 10-year period, the Vi-Speed Dehumidifier-Filter removes moisture and other damaging contaminants from compressed air, purifies it to a safe point for 99% of all industrial uses.

The Vi-Speed which uses Dryolite, a non-corrosive, metal-preservative, self-cleaning drying agent, requires no elements that need to be heated or regenerated - - - no metal, fabric or ceramic screens to clean or renew . . . no mechanisms to corrode, wear, adjust, replace or cause sparks. There is no maintenance, no downtime, no large investment. Made in several sizes, Vi-Speeds have capacities from 25 to 1000 c.f.f.a.m. at 100 p.s.i.

Send for brochure, "Moisture-Control by Vi-Speed," containing vital facts about the destructive and costly elements "hidden" in raw air as it comes from compressors.

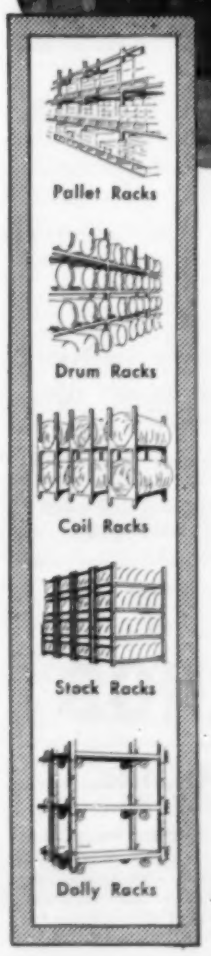
Other Vi-Speed devices include (A) air-powered vises that speed up holding, clamping, straightening, bending, etc. . . . that handle metal, wood, plastics, glass, sheet metal, heavy castings, etc. (B) Air-powered, low cost presses that speed up forming, shaping, assembling, etc. . . . that have adjustable openings from 1" to 48". Both the vises and presses have max. 10,000 lbs. pressure at 100 p.s.i. Many hundreds of plants are using Vi-Speed equipment. Send for catalogs.

AIR-POWERED VISES

AIR-POWERED PRESSES

VAN PRODUCTS CO., Mfrs.
3783 West 12th Street Lakewood, Erie, Pa.

If you write maker identify as IEN - 3147



Strong, safe, stacking racks, portable and stationary, of welded square steel tubing reduce costs in production, storage, order assembly, shipping — *in every industry.* May we show you how we can reduce your handling costs up to 50%?

WRITE FOR THIS NEW CATALOGUE

EQUIPMENT MFG. INC.
21564 Hoover Road • Detroit 5, Mich.

If you write maker identify as IEN - 3149

DRILLING . . Upright machine rates 1 in. in steel, 125 to 1,540 rpm.

Source: I. O. JOHANSSON COMPANY
7730 Austin Ave., Dept. IEN, Skokie, Ill.

For production use

Any one of eight speeds is provided by shifting gear levers on the motor driven head of this new drilling machine. The head can be raised and lowered, through 5¾ in., by turning a crank on the left hand side. The 15 by 24-in. table also can be raised and lowered for maximum distance between the spindle and the table of 34 inches. The head can be rotated around the column and locked in any position.

The ball bearing spindle carries a No. 3 Morse taper and has a feed travel of 4½ inches. Throat dimension is 18 inches. Construction is characterized by a built-in drill ejector that makes a drift or hammer unnecessary for tool changes and permits tool changes while the spindle is rotating. Two depth stops include one on the left hand side for fine adjustment and a second positive one on the right hand side to insure maintenance of the original setting. The table carries three ½ in. tee slots on the top and on one side surface. The top surface is ground and all four sides are machined square. A coolant trough and outlet are included. The table can be turned around the column and on its own center. Both positions can be locked.

If you write maker identify as IEN - 3150

MAGNET . . Permanent design for use as a sweeper or utility unit

Source: ERIEZ MFG. CO.
Grove Drive, Dept. IEN, Erie, Pa.

Alnico V magnetic tube

One-inch tube, 8 to 32 in. in length, forms this new permanent magnet. It is designed for application in a sweeper frame, or singly, or in multple by hand. Ferrous chips, filings, nails, tacks, can be picked up from a floor. Ferrous parts can be removed from solutions, picked up from a bench or out of a storage bin.

The tube is fitted with a neoprene wiper ring which the operator slides from one end to the other to remove the accumulated materials. These can be cleaned off into a pan on the sweeper frame that forms a part of the assembly and is known as the Sweeperette. List prices start at $34.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3151

WHICH V-BELT is best for you?

If the correct size of endless V-Belt is not readily available, or if you have to tear down machinery to install, then the best belt to use is open-end V-Belting fastened with

ALLIGATOR **V-BELT FASTENERS**

★ In this way you can make up V-Belts in *any length* to fit *any drive* the fast economical way—V-Belts that perform exceptionally well.

★ In contrast to link-type belts these ALLIGATOR fastened V-Belts have just *one* strong joint . . . *stretch and follow-up maintenance are reduced to a minimum.*

ALLIGATOR **INTRODUCTORY V-BELT DRIVE UNITS**

contain V-Belting, Fasteners and Tools —everything you need in one compact package to make up V-Belts quickly. Available in sizes A, B, C & D.

Ask for Bulletins V-215 and V-216
Order From Your Distributor
FLEXIBLE STEEL LACING COMPANY
4610 Lexington Street, Chicago 44, Illinois

If you write maker identify as IEN - 3152

DETROIT ROCKING ELECTRIC FURNACE

Here is the furnace designed especially for fast, controlled metal melting on a limited scale. Indirect arc melting, automatic rocking control with 3-phase reversible motor, independently mounted electrode brackets for easy shell interchange, low power consumption. Rocking action assures complete homogeneity of metal, greater heat utilization, longer lining life. For ferrous and nonferrous alloys. Excellent for research and educational use. Sold complete with transformer.

Write today for full information on Type GMS Detroit Rocking Electric Furnace.

FEMA

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL—Equipamentos Industrias "Elsa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castellvi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Casco, S. de R. L. Atenas 32, Despacho 14, Mexico City, D. F.

If you write maker identify as IEN - 3153

CUTTING COSTS WITH ALLMUL

"B&W Allmul Firebrick cost half as much"

A builder of billet heating furnaces used an expensive electrically-fused mullite refractory in the piers and baffles as well as for the arches in the discharge end of the flue. Reason? Severe operating conditions at these points. Tests of B&W Allmul proved it withstood high temperatures equally well . . . cost approximately half as much. Result? Allmul is now standard for these locations.

Bulletin R-29 gives all the facts on B&W Allmul. Write for your copy.

THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y.
WORKS: AUGUSTA, GA.

If you write maker identify as IEN - 3154

NEOPRENE PROTECTION APPLIED LIKE PAINT!

coatings and linings against corrosive fumes or immersion by roller, brush or spray

Gaco LIQUID NEOPRENE PROTECTIVE COATINGS

N-700	N-200-1
General Maintenance Coating for protection against corrosive fumes and splash. Air Curing—No Heat.	Heavy Duty Lining for tanks and equipment—for constant contact and immersion. Heat Curing.

Send me the facts about this genuine Neoprene Corrosion Protection that goes on like paint at **LOWER APPLIED COST and OUTLASTS ALL OTHER COATINGS.**

Name .....
Company .....
Address .....

Send this coupon to
GATES ENGINEERING COMPANY
P. O. BOX 1711, WILMINGTON, DEL.

If you write maker identify as **IEN - 3155**

The Original...

Fafnir Wide Inner Ring Bearing with Self-Locking Collar and Mechani-Seals

A Time-Tested and Proven Feature of Fafnir Ball Bearing Power Transmission Units

Counterbored, eccentric cam, mated construction of collar and inner ring assures positive locking action without set screws, lock nuts or adapters

FAFNIR BALL BEARINGS

Most Complete Line in America

THE FAFNIR BEARING COMPANY, NEW BRITAIN, CONN.

If you write maker identify as **IEN - 3156**

ENORMOUS SAVINGS IN COLOR DECORATION OF 3-DIMENSIONAL PARTS

ELECTRO-FORMED METAL SPRAY PAINTING MASKS

(Made by Patented Process)

Permit rapid wet painting, one color after another. Clean, sharply defined letters and decorative effects obtained on intricate die castings, stampings and plastic forms by accurate control of painted areas. No fogged edges. After-wiping or buffing-off of over-spray unnecessary. The "loose" inside of letters and numerals, such as "0" and "6", is held in position by arched bridging to eliminate objectionable "ties". Plug-type masks [keep depressed areas clear, while spraying background]; lip-type masks [protect background while painting depressed areas]; and block-cutout, plane-surface type masks.

Foot treadle air-operated clamps, fixtures and tools which position and hold the piece snugly in the mask; and permit the operator to use both hands.

We design, engineer and build automatic, entirely air-operated machines for spray decorating a variety of small parts at speeds of up to 3600 per hour. Masks inserted flush with top of work table. Spraying is from below. Dials regulate cycling speed and amount of paint sprayed. The same amount of paint is sprayed on every part, regardless of speed of loading cycle. Effect paint savings up to 50% over hand spraying. Employ automatic guns and air-agitated paint pressure tanks with insert containers.

AUTOMATIC, ROTARY-INDEXING PAINTING MACHINE

Completely air-operated or actuated by electric-motor Geneva drive. Machine illustrated has 24 work-holders and indexes 12 times per each complete revolution of the table. The part cavity is eight inches deep and the painting is accomplished on the return stroke, with the work being revolved by a variable-speed air drive.

Speed of stroke during painting regulated by convenient dial. Speed of indexing dial controlled to paint from 400 to 1200 pieces per hour, two at a time. Continuous, circulating paint system. Can be supplied with hot-spray equipment if desired. Built for 4-, 6-, 8-, 12- or 24-station indexes or continuous movement.

We also manufacture mask washing equipment.

CONFORMING MATRIX CORPORATION
330 Toledo Factories Bldg., Toledo 2, Ohio

Please send without obligation, details on [ ] Automatic Rotary Indexing Painting Machines; [ ] Automatic Single-Spindle Painting Machines; [ ] Hand Masks; [ ] Mechanical Masking Fixtures; [ ] Air-Operated Masking Fixtures; [ ] Stationary, Automatic Spray-Painting Masking Machines; [ ] Rotary Table, Automatic, Spray-Painting Masking Machines; [ ] Mask-Washing Equipment; [ ] Quotations on masks for parts [or prints] which I am forwarding.

NAME.....

FIRM.....

STREET.....

CITY & STATE.....

If you write maker identify as **IEN - 3158**

DRILLING . . Radial machine, mounts on bench, has 24 in. radial arm

Source: CLEVELAND TAPPING MACHINE CO.
1203 Camden Ave., Dept. IEN, Canton 6, Ohio

Production or tool room

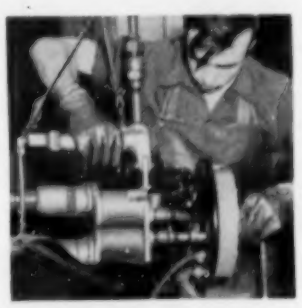
The company announces purchase of the Munding bench type radial drill, previously described IEN-3723-37. It has improved the design and now offers the machine for general use.

Assembly includes a 3⅜-in. column and a 24-in radial arm. A motor driven head rides the column and is provided with 6⅛ in. of spindle movement. The spindle operates at eight speeds between 160 and 3,140 rpm. Horizontal travel of the head on the arm is 18 inches. Capacity in steel is ½ inch. The machine can be equipped with a 1/3, ½ or ¾-hp. motor. Lead screws and handwheels provide for manual vertical and horizontal movement. An adjustable table, also mounted on the column, completes the assembly.

If you write maker identify as **IEN - 3159**

WRENCH . . Multiple torque unit, pneumatic drive, for fast nut setting

Source: KELLER TOOL CO.
Parks St., Dept. IEN, Grand Haven, Mich.



Valve controlled

Individual wrenches, each with its own pneumatic motor drive, are assembled on a mounting plate made of ½-in. steel. The plate can be changed as the nut pattern changes. It is designed to take 2 to 5 of the spindle units. They bolt in place and can be removed quickly for conversion to other production jobs. Steel tubing, measuring ½ in., is employed to carry air from a manifold to the individual units. The tube is cut to length and bent to shape in making an assembly setup. Vibration is absorbed in flexible fittings.

Four wrench units cover a torque range from 20 to 120 foot pounds. Offset spindles are available when close spacing is involved. Axially resilient socket adaptors assist in "finding" nuts or bolt heads. Each unit has its own regulator that can be set to hold within 3 per cent of a required torque.

If you write maker identify as **IEN - 3160**

Fiberglas matting, a resilient thermal insulation, is being employed, in connection with an outer facing of coated or aluminized glass cloth, by Fyrepel Products, Inc., Dept. IEN, Newark, Ohio, to manufacture protective clothing for workers subject to abnormal heat. The matting is faced on the inside with a suitable fabric and is compressed to about ⅜ in. in thickness. Coats, trousers, shin protectors, boots, aprons, hand pads, blankets are included in the line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3161**

DAV-SON CORK-BACKED BULLETIN BOARDS

DAV-SON indoor and outdoor style Bulletin Boards provide attractive displays for up-to-the-minute announcements and posters. Your choice of hardwood or metal frames, with or without locking glass doors, illuminated or non-illuminated.

"THE SAFETY DIRECTOR"

Flashing display is a constant warning to employees to avoid accidents. Changeable letters permit timely safety messages to be set up as often as required. Definite improvement in safety records has been noted in plants using "The Safety Director."

Write for complete information regarding DAV-SON — Cork Bulletin Boards and Directories and the famous "Safety Director."

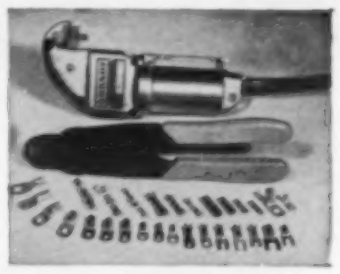
DAV-SON

Ask for Bulletin "A"

A. C. DAVENPORT & SON, INC.
ESTABLISHED 1932
311 N. DESPLAINES ST., CHICAGO 6, ILL.

If you write maker identify as **IEN - 3162**

COMPRESSION TERMINALS and LINKS



All types, all sizes quickly, easily installed with wide variety of matched tooling

All sizes of solderless lugs and links for all conductors and all applications in manufacturing and plant wiring can be rapidly, economically installed by means of Burndy tooling, coordinated with specific manufacturing methods and production requirements.

Burndy Hylugs and Hylinks are of one-piece, pure copper construction, so they can be indented on any side of the barrel and they can't split. There are no intermediate contact surfaces — current is carried by the entire cross-section. Plated to resist corrosion. Listed by Underwriters' for #22 through 2000 Mcm.

Intimate high-pressure contact between conductor and connector is assured by Burndy matched installation tools. Manual, hydraulic, and pneumatic tools are designed for portable, on-the-job use and for production bench operation.

For complete details and catalogs, write
Dept. H, BURNDY, Norwalk, Connect.

If you write maker identify as **IEN - 3163**

R/M's BIG 7 Packing Types meet 95% of all packing needs

Circulating pumps like this one, which is used to circulate water to a cooling tower, give top performance with R/M Packing No. 1840, a universal packing included in Type 1 of R/M's Big 7 Packing Types.

Let R/M lower your maintenance costs

R/M's Big 7 Packing Types are engineered to give custom-built performance in all but the very rarest packing applications. By standardizing on this basic line of just seven field-tested packing types (you probably need only three or four in your plant) you can reduce the number of times you have to re-pack, the labor costs of packing, the labor costs of "too frequent" adjustments, the costs of damage to equipment, and the costs caused by non-uniform performance. You will also be able to cut your packing inventory and simplify your ordering. For details, call in your R/M distributor.

R/M Packings for maintenance purposes are sold only through authorized R/M distributors

R/M BIG 7 PACKINGS

RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.

FACTORIES: Bridgeport, Conn.; Manheim, Pa.; No. Charleston, S.C.; Passaic, N.J.; Neenah, Wis.; Crawfordsville, Ind.; Peterborough, Ontario, Canada.

RAYBESTOS-MANHATTAN, INC., Packings • Asbestos Textiles • Industrial Rubber, Engineered Plastic, and Sintered Metal Products • Abrasive and Diamond Wheels Rubber Covered Equipment • Brake Linings • Brake Blocks • Clutch Facings • Fan Belts • Radiator Hose • Bowling Balls

If you write maker identify as **IEN - 3165**

SLASH

Idle Man-Hours...
Machine Down Time...
Inventory Investment...
with a Planned Maintenance Program

This informative 8-page booklet, "Assured Equipment Productivity Through Maintenance Management" (X1383) shows, in detail, how you can streamline your whole maintenance operation at the lowest clerical and equipment cost possible. In addition, the recommended system gives you valuable equipment records that promote wise decisions on replacement or retirement of equipment . . . and accurate data for executive reports, so that management can act surely, swiftly.

Send today for free booklet X1383. Remington Rand, Room 1912, 315 Fourth Ave., New York 10.

Remington Rand INC

PROFIT-BUILDING **IDEAS** FOR BUSINESS

If you write maker identify as **IEN - 3166**

IT'S HERE . . . *positive power transmission —without lubrication!*

Now Available in STANDARD STOCK DRIVES

During the past six years, original equipment manufacturers have found in custom-engineered "Timing" Belt drives a means of simplifying and improving their products' design and performance. Now the *same* advantages can be applied by plant engineers to various individual drives at a cost competitive with other methods of power transmission. A wide range of Gilmer *Standard* "Timing" Belts and matching pulleys are now—or soon will be—available from local distributors' stocks.

Wherever slippage or drive lubrication presents a problem, or the saving of space or weight is important, consider these unique features of the "Timing" Belt drive:

CAN'T SLIP—Positive engagement of the "Timing" Belt's teeth with axially-cut pulley grooves assures no slippage, no creep, no power loss, precision control of speed ratio.

STRONG, LIGHT, FLEXIBLE—A single layer of continuously-wound, neoprene-encased, steel cable of high tensile strength gives the "Timing" Belt highest strength-to-weight ratio, with extreme flexibility. No stretch; no take-up. Range: 1/100 to 300 hp.

NO INITIAL TENSION—Teeth, not friction, provide the grip . . . reducing bearing loads and eliminating need for outboard bearings.

NO LUBRICATION—Absence of metal-to-metal contact eliminates need for lubricants, lubricating devices and housings. High Speeds cause no lubricating problems.

ULTRA COMPACT—Very small pulleys can be used without slippage, permitting very short centers and high ratios.

SPEED RANGE—Operates without slippage at speeds of inches per day to 15,000 rpm. Mechanical efficiency is very close to 100%.

Ask your local NYB&P Distributor for a copy of the Gilmer "Timing" Belt STANDARD DRIVE MANUAL or use the request form to obtain a copy of the Manual and location of nearest stock-carrying distributor.

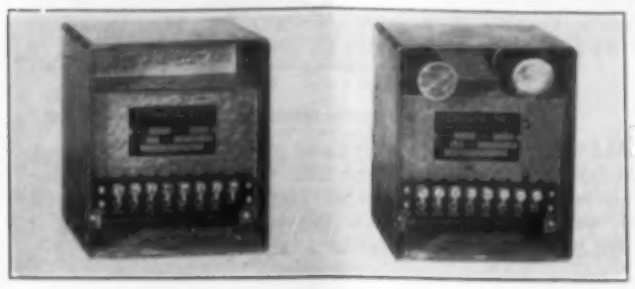
NYB&P NEW YORK BELTING & PACKING CO. America's Oldest Manufacturer of Industrial Rubber Products

---

If you write maker identify as **IEN - 3168**

CONTROL . . For level regulation in high and low conductivity liquids

Source: FERRARA INCORPORATED
8106 W. 9-Mile Road, Dept. IEN, Oak Park 37, Mich.



Illustrated details in Bulletin A

Magnetic and electronic equipment are included, for liquids with high and low electrical conductivity respectively, in the company's new line of floatless liquid level controls. The magnetic type, to the left in the illustration, employs an ac. actuated dc. relay for the load circuit. It is suited for liquids such as ordinary water, milk, beer, condensates. The electronic design to the right applies in low conductivity liquids such as refrigerants, alcohol, distilled water, penicillin. Both operate on 110-volt ac. and can control loads to 1 hp. directly or larger loads with the use of a load circuit relay.

One or more stainless steel probes apply in liquid held in an open or closed container or process vessel. The probes connect electrically to the control housing. They can be arranged for various types of operation, in connection with relay contacts, that can be normally open or normally closed depending upon the requirements. List price, with relay rating at 15 amp., is about $32 for the magnetic design and about $52 for the electronic unit. Probes and fittings are quoted separately to meet given requirements. The control housing is a 16-gage NEMA Type 1 measuring 6 by 4 by 7½ inches.

If you write maker identify as **IEN - 3169**

GAGE . . Mechanical comparator reads over and under master dimension

Source: DoALL COMPANY
254 N. Laurel Ave., Dept. IEN, Des Plaines, Ill.

Bulletin 53-202

The spindle in this new Producto-Chek gage is carried by a pair of flexible diaphragms. It is limited in its axial movement by a stop for overtravel protection. It acts upon a pair of reeds fitted with damping springs and attached to the rotating mechanism for the pointer. Three head assemblies are interchangeable on the gage column for English measurements in which single divisions on the scale read 0.0001, 0.00005 and 0.000010 inch. Magnification ranges from 500X to 4000X. Four additional metric heads provide 0.002 to 0.00025-mm. divisions.

Maximum work diameter is 3½ inches. Maximum gaging height over the anvil is 8 inches. Spindle pressure is 5 to 8 ounces. The gage measures 6⅜ by 11½ by 19¼ inches. It is provided with one coarse and two fine adjustments for initial setup to a master. The spindle tip is hardened steel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3170**

TINNERMAN TUBULAR-TYPE *Speed Clips*®

. . . save up to 50% on Assembly Costs in "blind" attachments

Tubular type SPEED CLIPS provide fast, efficient, vibration-proof attachments. They are used with unthreaded studs, or rivets; are available in a wide range of sizes. Snapped into place by hand, they virtually nail panels together. An ideal fastener where only one side of the assembly is accessible; perfect for attaching name plates, grilles, decorative trim. See your local Tinnerman representative for full information on Tinnerman SPEED NUT Brand Fasteners, or write direct to:

Insert SPEED CLIP into hole; Spring Steel prongs compress, then spring out after fully inserted, holding Clip in position.

Line up second part of assembly and start rivet into SPEED CLIP.

Seated rivet is engaged as turned-in end of SPEED CLIP "bites" rivet to lock it securely.

TINNERMAN PRODUCTS, INC.
Dept. 12, Box 6688, Cleveland 1, Ohio

If you write maker identify as **IEN - 3171**

Reproduce any pattern in almost any medium on almost any surface...

by silk screen printing with the

KODAK EKTAGRAPH PROCESS

It will pay you to investigate this precise but low-cost method of printing instrument dials, electrical circuits, nameplates, charts, instructions, trade-marks, etc., on almost any surface.

The Kodak Ektagraph Process provides an easy way to make silk screen stencils that print with *photographic* accuracy. The process is fast, inexpensive, simple. No darkroom is required.

For complete information write to:

GRAPHIC ARTS DIVISION
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak

If you write maker identify as **IEN - 3172**

Simpson Model 260

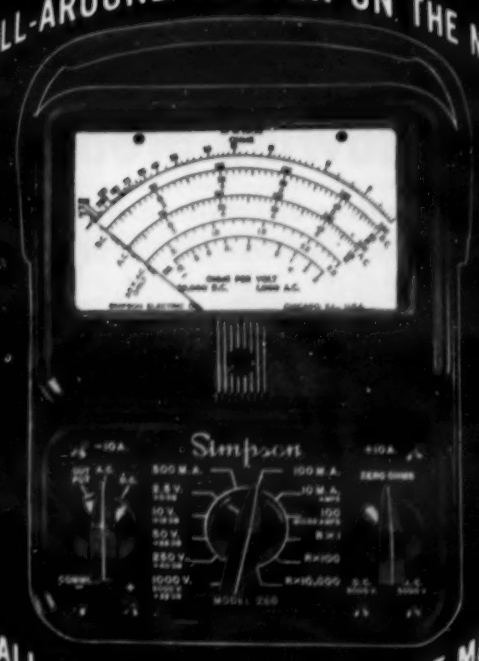
VOLT-OHM-MILLIAMMETER
$38.95 Dealer's net.

USE IT FOR:

- TV SETS
- RADIOS
- TRANSMITTERS
- BROADCASTING EQUIPMENT
- HOME APPLIANCES
- TWO-WAY RADIO COMMUNICATIONS SYSTEMS
- PHONE LINES
- AIR CONDITIONING SYSTEMS
- STARTER CONTROLS
- AUTO IGNITIONS, GENERATORS, BATTERIES
- MOVIE EQUIPMENT
- PANEL INSTRUMENTS
- TV CAMERAS
- AUTO LIGHTING SYSTEMS
- GENERATORS
- VOLTAGE SOURCES
- "HAM" RADIO EQUIPMENT
- CABLES
- CONNECTORS
- AUDIO FREQUENCY SOUND CURRENTS

and write for your complimentary copy of "1001 Uses for the Simpson Model 260" 50 pages of uses.

BEST ALL-AROUND TESTER ON THE MARKET



BEST ALL-AROUND TESTER ON THE MARKET

RANGES:
20,000 OHMS PER VOLT DC
1,000 OHMS PER VOLT AC
VOLTS, AC AND DC: 2.5, 10, 50, 250, 1,000, 5,000
OUTPUT: 2.5, 10, 50, 250, 1,000
MILLIAMPERES, DC: 10, 100, 500
MICROAMPERES, DC: 100
AMPERES, DC: 10
DECIBELS (5 RANGES): −12 TO +55 DB
OHMS: 0-2000 (12 OHMS CENTER), 0-200,000 (1,200 OHMS CENTER), 0-20 MEGOHMS (120,000 OHMS CENTER)

SIMPSON ELECTRIC COMPANY
5200 W. Kinzie St., Chicago 44 • EStebrook 9-1121
In Canada: Bach-Simpson, Ltd., London, Ont.

If you write maker identify as IEN - 3174

A TOOL BOX AT YOUR FINGERTIPS

INTERCHANGEABLE COUNTERBORE SETS

Continental Interchangeable Counterbore sets give you a wide variety of cutting tools in a compact, convenient form. Three sets are available, for the large or small toolroom. Each set features the famous Continental indestructible drive that will not stick, will not break, and is always hand detachable. Full details are given in Bulletin B 47-37. Send for your copy.

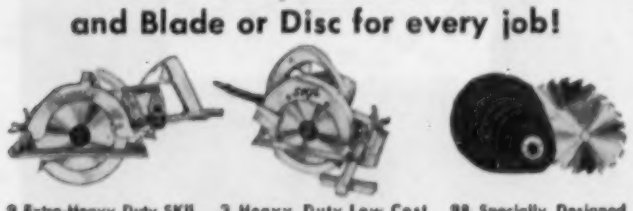
CONTINENTAL TOOL WORKS
Division of Ex-Cell-O Corporation
Detroit 32, Michigan
CTW

If you write maker identify as IEN - 3175

ON EVERY-DAY SAWING . . . OR ON CUTTING TOUGH METALS, MASONRY OR COMPOSITIONS

"SKIL has the answer" to all sawing problems!

. . . with a Specialized Model and Blade or Disc for every job!



9 Extra-Heavy Duty SKIL Saws with high-torque worm drive for heavy ripping, for tough metals and compositions that no other saw can handle. Minimum maintenance in heaviest service. Blade diameters from 6" to 12".

3 Heavy Duty Low Cost SKIL Builders Saws with high blade speed. The new SKIL Builders Saws are ideal for cut-off work and use with abrasive wheels. Many features found only in far costlier saws. Blade diameters: 6", 7¼", 8¼".

98 Specially Designed SKIL Blades and Abrasive Cut-off Wheels carried in stock by SKIL Branches and distributors. With the proper SKIL Saw, you can efficiently cut almost any material.

We'll help you with your tough cutting problems

FREE! New SKIL Blade Selector quickly shows you the blade and SKIL Saw that will most efficiently cut practically every material. Ask your SKIL distributor for *yours* or send coupon below.

FREE! Test Cutting Service on your problem materials. Send us samples of materials and details of any cutting problems. We'll test cut the material and let you know the SKIL Saw and blade or disc to use.

FREE! Ask for a Demonstration and a FREE Trial. Send in Coupon NOW

SKIL PORTABLE TOOLS

Made only by SKIL Corporation formerly SKILSAW, Inc. 5033 Elston Avenue, Chicago 30, Ill. 3601 Dundas Street West Toronto 9, Ontario Factory Branches in All Leading Cities

SKIL Corporation, Dept. IEN-34
5033 Elston Avenue, Chicago 30, Ill.
☐ I would like a SKIL Blade Selector
☐ I would like a demonstration and free trial
☐ Please send literature on SKIL tools

Name_____
Company_____
Street_____
City_____ Zone_____ State_____

NEW LITERATURE

If you write maker identify as IEN - 0192

AIR CONDITIONING . . Units from 200 to 3,000 cfm., also cooling coils, unit coilers, cooling towers and evaporative condensers. Catalog 98, 24 pages. McQuay Inc., 1600 Broadway N. E., Dept. IEN, Minneapolis 13, Minn.

If you write maker identify as IEN - 0193

ALUMINUM . . Sizes, alloys and tempers available as mill standard are listed in 12-page 1954 "Mill Products" catalog. They cover wrought-alloy sheet, plate, embossed sheet, rod, bar, wire, tube, pipe, shapes. Reynolds Metals Co. 2553 S. Third St., Dept. IEN, Louisville 1, Ky.

If you write maker identify as IEN - 0194

MAGNETIC AMPLIFIERS . . Transductor models of the Magamp magnetic amplifier act essentially as instrument transformers for dc. currents and voltages. Operating theory and applications in 8-page Bulletin 52-601. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Pittsburgh 30, Pa.

If you write maker identify as IEN - 0195

TRANSISTOR BATTERIES . . Miniature dry batteries to power transistor circuits are described in four-page bulletin, "Transistor Power Supplies," together with discharge curves. Burgess Battery Co., Dept. IEN, Freeport, Ill.

If you write maker identify as IEN - 0196

ROLLER BEARINGS . . Redesign of the company's spherical roller bearing employs a separate ring to guide the rollers. Life and capacity comparisons between new and previous models are in 14-page Bulletin 365. SKF Industries Inc., Erie Ave. & Front St., Dept. IEN, Philadelphia 32, Pa.

If you write maker identify as IEN - 0197

BENDING . . Machines to form cases and cabinets from sheet metal by means of radius bends in preformed flanged panels. Desks, refrigerator cabinets, housings are examples. Sequence pictures in 32-page Catalog SP-930. Cyril Bath Co., Solon Road, Dept. IEN, Solon, Ohio

If you write maker identify as IEN - 0198

BOILERS . . Package-type automatic steam generators in sizes to 500 hp. and for pressures to 250 lb. are supplied for oil, gas or combination firing. "Powermaster," 4 pages. Orr & Sembower Inc., Morgantown Road, Dept. IEN, Reading, Pa.

If you write maker identify as IEN - 0199

BROACHING . . Automotive castings are broached at 200 fpm. by a horizontal machine using planer-type carbide tools. How this is done is described by 8-page technical article reprint Bulletin M-1821. Cincinnati Milling Machine Co., Marburg & Kline Sts., Dept. IEN, Cincinnati 9, Ohio

If you write maker identify as IEN - 0200

BUILDING PARTITIONS . . Movable metal interior walls enable you to lay out rooms and offices to suit your individual requirements. Catalog 54, 68 pages, letterhead request. Mills Co., 976 Wayside Road, Dept. IEN, Cleveland 10, Ohio

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3177

How to Select the Right Liquid Meters

Free metering Data Book . . . Yours for the asking

Save time and ingredients, get closer quality control and more accurate cost accounting with Neptune meters. Now accurately measuring more than 150 liquids including water, oils, syrups, brines, soap solutions, solvents, etc. Capacities from 2 to 1000 gpm. Registers range from simple counters to new Auto-Stop automatic batching meters. *Ask for Bulletin 566 UI.*

neptune

NEPTUNE METER COMPANY, 50 W. 50th ST., NEW YORK 20
Branches in Principal Cities
In Canada: NEPTUNE METERS LTD., TORONTO 14, ONTARIO

If you write maker identify as IEN - 0201

CALCULATING . . How to get today's inventory today is described in 4-page Bulletin EL-148. Electronic equipment accepts 9,000 entries per hour from 10 operators, maintains 39,000 up-to-the-second three-digit totals. Remington Rand Inc., 315 Fourth Ave., Dept. IEN, New York 10, N. Y.

If you write maker identify as IEN - 0202

CASTINGS . . Made of manganese steel for wear resistance under impact and abrasion. Power shovel dippers and teeth, crusher and pulverizer parts, wheels, sheaves, gears, chain are examples. "Amsco Castings," 24 pages. American Manganese Steel, 389 E. 14th St., Dept. IEN, Chicago Heights, Ill.

If you write maker identify as IEN - 0203

CHUCKS . . Collets and step chucks are listed by maker's name for standard lathes, grinders and milling machines in 4-page Bulletin 100-E. Rivett Lathe & Grinder Inc., 22 Riverview Road, Dept. IEN, Brighton 35, Mass.

If you write maker identify as IEN - 0204

CLEANING MATERIAL . . Sodium sesquisilicate combines vigorous alkaline action with restrained caustic behavior to protect fabrics and sensitive metals. How it performs is in 12-page "Metso 99". Philadelphia Quartz Co., Public Ledger Bldg., Dept. IEN, Philadelphia 6, Pa.

If you write maker identify as IEN - 0205

SPRAY CLEANING . . Hypressure Jenny machine produces a steam jet from a detergent solution to clean dirty floors, greasy parts, food-handling equipment, building exteriors. Examples are in 6-page Bulletin I-53. Homestead Valve Mfg. Co., P. O. Box 85, Dept. IEN, Coraopolis, Pa.

If you write maker identify as IEN - 3178

MIX FLUIDS in any tank or container

Get rapid, thorough mixing in any open vessel—with a LIGHTNIN Portable Mixer.

It clamps in place. You can adjust it immediately to the correct angle. It mixes completely and uniformly, by causing rapid top-to-bottom turnover, plus rotation of tank contents. No baffles necessary.

Do these mixing jobs—fast

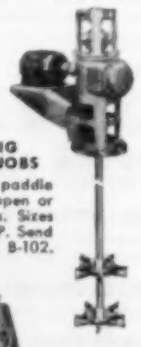
Get just the kind of action you want with a LIGHTNIN. Vigorous mixing, or gentle blending. Beat, stir, circulate fluids. Disperse gases in liquids. Wash, dissolve, suspend solids . . . quickly, uniformly.

Fully guaranteed to do an efficient mixing job for you, or your money back. Thousands in use everywhere. Many in service over 20 years.

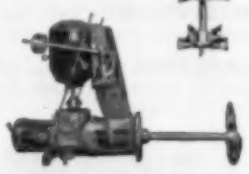
Thirty portable models to choose from—⅛ to 3 HP. Electric and air motor types. Direct or gear drive.

Send today for illustrated Catalog B-108 and prices.

RAPID, UNIFORM MIXING
Mounted at off-center angle, LIGHTNIN turns tank contents over and over, while rotating them around and around.



FOR BIG MIXING JOBS
Turbine and paddle mixers for open or closed tanks. Sizes 1 to 500 HP. Send for Catalog B-102.



FOR VERY LARGE TANKS
Side entering propeller mixers. Sizes 1 to 25 HP. Send for Catalog B-103.

Lightnin® Mixers

MIXING EQUIPMENT Co., Inc.
124 Mt. Read Blvd., Rochester 11, N. Y.
In Canada: William & J. G. Greey, Ltd., 100 Miranda Avenue, Toronto 10, Ont.

If you write maker identify as **IEN - 0206**

COMMUNICATING . . Teleprinter machine operates like a typewriter to send and receive messages within a plant or between plants hundreds of miles apart. "Printed Communications Equipment," 24 pages. Kleinschmidt, Inc., County Line Road, Dept. IEN, Deerfield, Ill.

If you write maker identify as **IEN - 0207**

COMMUNICATING . . Equipment for intercommunication between office and shop areas of a power plant ranges from handsets to amplifiers to speakers. Bulletin P-831, 16 pages, shows typical locations. Radio Corp. of America, 1941 Front & Cooper Sts., Dept. IEN, Camden 2, N. J.

If you write maker identify as **IEN - 0208**

AIR COMPRESSORS . . How to select an air compressor for your shop is detailed at the start of 16-page Catalog 810. Information covers 27 sizes in five types from ¼ to 20 hp., portable, tank mounted, trailer units. Binks Mfg. Co., 3122 Carroll Ave., Dept. IEN, Chicago 12, Ill.

If you write maker identify as **IEN - 0209**

MACHINE TOOL CONTROL . . "Automation of Machine Tools" is a 24-page description on single to three-dimension servo-controls for standard machines and on special tracer-control machines built to order. Turchan Follower Machine Co., 8259 Livernois Ave., Dept. IEN, Detroit 4, Mich.

If you write maker identify as **IEN - 0210**

PROCESS CONTROLS . . Instrument component measures small differential pressures in electrical units by means of strain gages. It applies to remote flow or liquid level. "Technical Information 27-A-23b," 6 pages. Foxboro Co., 42 Neponset St., Dept. IEN, Foxboro, Mass.

If you write maker identify as **IEN - 3180**

SAVE UP TO $1,000.00
ON YOUR NEXT GAS FORK TRUCK PURCHASE

BAKER "Yardloader" 4000 POUND CAPACITY

● Here's a fork truck built for rugged outdoor service. Large pneumatic tires, exceptionally high ground clearance and oscillating rear axle permit its operation on unimproved or semi-improved ground surfaces. Powerful heavy-duty industrial engine, extra-heavy drive axle, and 4-speed transmission assure ample power for rough work. Travel speed approaching 14 MPH in high gear enables it to cover large areas efficiently. Hydraulic lift permits stacking to 122 inches.

But the outstanding feature of the Yardloader is its amazing low price—about 25% under any other gas truck in its capacity.

Get all the facts—and save up to $1,000.00 on your next gas fork truck.

Baker industrial trucks

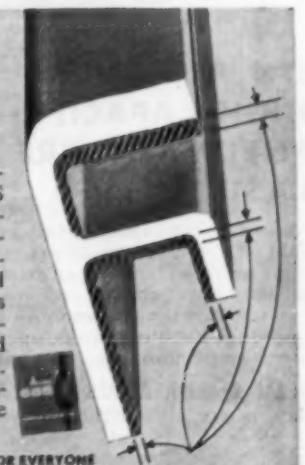
THE BAKER-RAULANG COMPANY
1226 WEST 80th STREET • CLEVELAND 2, OHIO

If you write maker identify as **IEN - 3181**

New Harvey aluminum alloy 66S will reduce your costs

high-strength-low-cost-ratio

66S saves money by combining the high strength of 24S and the good corrosion resistance, weldability and economy of 61S. This new aluminum alloy cuts material and fabricating costs and reduces product weight. Tooling service charges are nominal and Harvey prepays the freight. Study the cost-saving advantages of Harvey 66S. Write for your Bulletin on 66S.



Made of 61S, extrusion above requires the full cross section. Using 66S saves material in shaded area, reduces costs 21%.

MAKING THE MOST OF ALUMINUM...FOR EVERYONE

HARVEY Aluminum

HARVEY ALUMINUM SALES, INC.
TORRANCE—LOS ANGELES, CALIFORNIA
BRANCH OFFICES IN PRINCIPAL CITIES

NEW LITERATURE—Continued

If you write maker identify as **IEN - 0211**

CONVEYING . . Types to handle containers, packages, fabricated parts and assemblies are presented as illustrated data summaries in 36-page Catalog 1000-B. They include roller, wheel, spiral, belt, vertical types. Samuel Olson Mfg. Co., 2420-22 Bloomingdale Ave., Dept. IEN, Chicago 47, Ill.

If you write maker identify as **IEN - 0212**

CONVEYOR BUCKETS . . Twelve-page Catalog 100 lists commonly-used styles, sizes and gages of steel elevator buckets together with list prices and approximate capacities. Standard Metal Mfg. Co., Dept. IEN, Malinta, Ohio

If you write maker identify as **IEN - 0213**

CORK . . Physical characteristics and uses for natural cork and compositions are reviewed in 4-page "Industrial Cork Products". Some of these include handles, floats, stoppers, clutch facing, insulation, gaskets, polishing wheels, feed rolls. Dodge Cork Co., Dept. IEN, Lancaster, Pa.

If you write maker identify as **IEN - 0214**

COUNTING . . Circuit-operating predetermining counter with automatic recycling to control a machine or process. Actuation is by a rotating shaft, reciprocating member or electric impulse. Catalog, "Cyclo-Monitor," 34 pages, on letterhead request please. Counter & Control Corp., 5213 W. Electric Ave., Dept. IEN, Milwaukee 14, Wis.

If you write maker identify as **IEN - 0215**

DRIVE SHAFT COUPLINGS . . Sizes from fractional to over 800 hp. with bore to 9½ in. in 20-page Catalog 1009 along with a hp.-to-torque conversion chart. Lovejoy Flexible Coupling Co., 4814 W. Lake St., Dept. IEN, Chicago 44, Ill.

If you write maker identify as **IEN - 0216**

CRANES . . 15-ton lift Model 205 is supplied on crawlers or on a truck body for highway speed to 33 mph. Illustrated details in 8-page Catalog K-375. Koehring Co., 3026 W. Concordia Ave., Dept. IEN, Milwaukee 16, Wis.

If you write maker identify as **IEN - 0217**

CUTTING TOOLS . . Catalog 54, 76 pages, presents a line of cemented-carbide lathe tools, boring tools, milling cutters, planer tools, carbide-insert tools, tool blanks, dies and other carbide parts. There is a section on machining hints, grinding. Kennametal Inc., Dept. IEN, Latrobe, Pa.

If you write maker identify as **IEN - 0218**

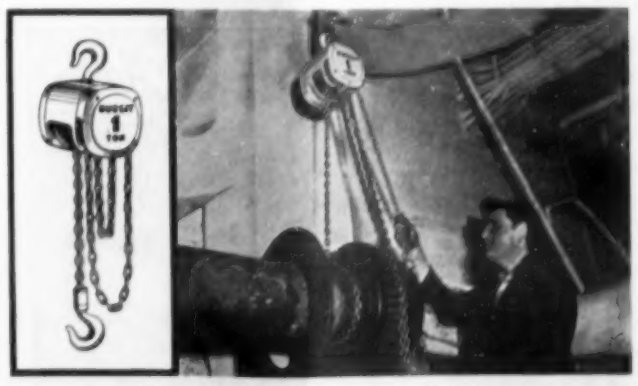
OVERHEAD DOORS . . Industrial and commercial overhead rolling designs feature cam-closing action. They can be supplied with electric operators with switch or remote wireless control. Details in 16-page Bulletin F-1406. Barber-Colman Co., 1300 Rock St., Dept. IEN, Rockford, Ill.

If you write maker identify as **IEN - 0219**

TWIST DRILLS . . Carbide-tipped and solid-carbide types in standard and fast-spiral designs, also drills for hardened steel, core drills. List prices in 12-page Bulletin 541. Super Tool Co., 21650 Hoover Road, Dept. IEN, Detroit 13, Mich.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as **IEN - 3182**



SAVES AS IT LIFTS

It's the 'Budgit' Aluminum Chain Block, the one-man hoist that's light, easy to carry, hang up and use anywhere for spot-lifting. The ¼-ton size weighs only 29 lbs., yet the full load can be lifted smoothly with a hand chain pull of only 25 lbs.

The 'Budgit' Aluminum Chain Block is tough — gives economical, long-life performance in everyday service. Spur-geared efficiency speeds lifting, and the big automatic load brake and over-capacity hooks and heat-treated load chain completely safeguard man, load, and hoist. Capacities: ¼, ½, 1 and 2 tons. Ask your "Shaw-Box" Distributor for detailed information or write for Bulletin 398.

'Budgit'® CHAIN BLOCKS

MANNING, MAXWELL & MOORE, INC.
Muskegon, Michigan

Builders of "Shaw-Box" and 'Load Lifter' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' Industrial Instruments, and Aircraft Products.

If you write maker identify as **IEN - 3133**

it's never too early for magnetic protection . . .
PRATER PERMANENT MAGNETS

are recommended for installation — **today** — before uncontrolled tramp iron is allowed to play havoc with your equipment.

PRATER PERMANENT MAGNETS, readily attached to hoppers, spouts or chutes, reach deep into the flow to weed out these destructive metals, increase operating efficiency and safeguard life and property. Each installation is specific as to type, size and arrangement of magnets, as specified by your requirements.

Write for details.

• SINGLE GAP • DOUBLE GAP
• HEAVY DUTY • HUMP CHUTE

PRATER PULVERIZER COMPANY
1536 S. 55th Court • Chicago 51, Ill.

PRATER

If you write maker identify as **IEN - 3184**

FREE BOOKLETS
TELL ALL ABOUT ALUMINUM WIRE

Get the full facts about what a wonderful job U. S. Rubber Aluminum Wires and Cables are doing for the electrical industry. These two clearly written, informative booklets are packed with data on specifications, standards, photographs showing stripping, joining, soldering—installation facts of all kinds, plus property tables. These booklets are FREE. Send for your copies today!

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WHEN ARE TWO HEADS BETTER THAN ONE?

FLAT SPRING STEEL is constantly being purchased for completely new end uses. In most of these new applications the desired results are achieved. If, however, the Flat Spring Steel does not perform as hoped, the steel used may be unsuitable for the job, or something may be askew in the material's application.

That's when two heads can be better than one! Roebling is just about the nation's largest producer of High Carbon Flat Spring Steel...and Roebling laboratories are always glad to cooperate with manufacturers, designers and engineers who have a problem child. Send details to Wire and Cold Rolled Products Div., John A. Roebling's Sons Corp., Trenton 2, N. J.

A subsidiary of The Colorado Fuel & Iron Corporation

ROEBLING

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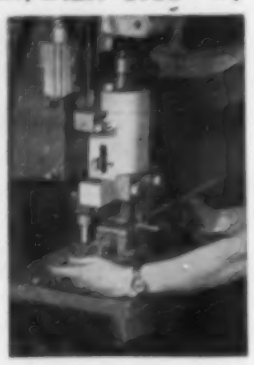
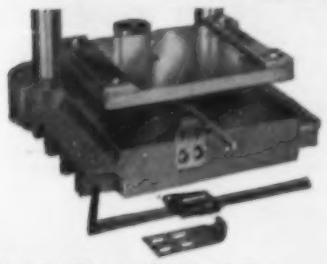
Adjustable Automatic Stock

FEED STOP for DIES

Dahlstrom Light Duty

AUTOSTOP





No drill jig...
No slotting...
No milling...

$1.75

Tested and improved through the years, the Dahlstrom Autostop will save hours of your high priced labor. Adjustable to work with blanking, progressive and compound dies. Mounts on stripper plate in 15 minutes. Handles sheet steel up to 1/16" x 6" or equivalent weight.

TO INSTALL: Just drill one 7/32-inch hole, then drill and tap four mounting holes per directions. That's all there is to it!

Trial order $1.75 each; lots of 12 $1.50 each. State whether for use on compound or progressive dies. *Write for free pamphlet.*

By the makers of the DAHLSTROM TAP GUIDE

Branch MANUFACTURING COMPANY
NORTH BRANCH • MINNESOTA

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Get Rid of Dirt Quickly, Safely with O-B

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Convenient-to-use compressed air becomes even more convenient, and safer, when it's used through an O-B Compressed Air Blowgun. A heavy flange protects thumb-button and stem against accidental release. A strong brass spring assures positive closure. The short outlet makes the gun fast to respond and reduces possibility of breakage. Composition disc can be quickly replaced when necessary. Blowgun comes in three sizes -- 1/8, 1/4 and 3/8 inches. O-B also makes a sand blast attachment to use with the blowgun.

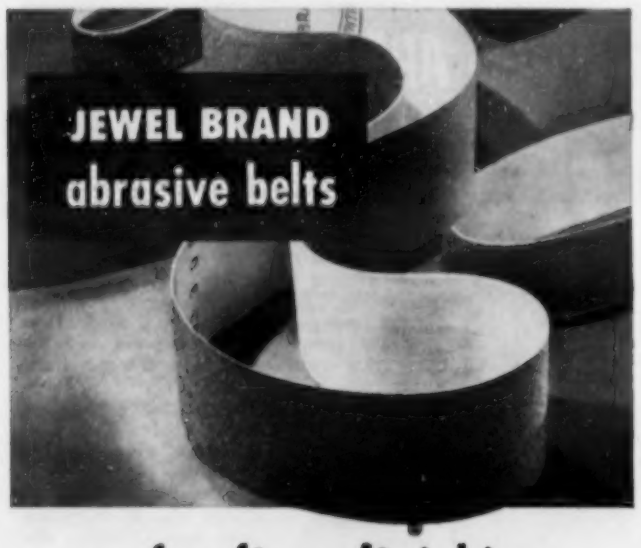
Ohio Brass also makes a complete line of bronze valves for industrial use. Write today for complete information.

4456-V

O-B VALVES

Ohio Brass
MANSFIELD OHIO, U. S. A.

If you write maker identify as IEN - 3188



...for finer finishing

Whether you grind, smooth or polish metal, wood, plastics, leather or rubber, there is a standard or special Jewel Brand Velvet Joint Abrasive Belt designed and made to help you do a better job . . . faster . . . at a lower cost.

Select the right one for *your* particular requirements now. Send for the new, revised Jewel Brand Abrasive Products Catalog and Price List today. Abrasive Products, Inc., 541 Pearl Street, South Braintree, Mass.

JEWEL BRAND
coated ABRASIVES

NEW LITERATURE—Continued

If you write maker identify as IEN - 0220

DRIVE COMPONENTS . . V-belt sheaves, V-belts, flat-belt pulleys, flexible shaft couplings, bronze and ball-bearing pillow blocks. Bulletin 596, 4 pages. T. B. Woods Sons Co., 1200 Fifth Ave., Dept. IEN, Chambersburg, Pa.

If you write maker identify as IEN - 0221

DUST COLLECTING . . Cloth tubes in the AmerJet unit filter out dust particles and collect them. A reverse air jet dislodges them. Floating tension weights keep tube diameters constant. Bulletin 279, 4 pages. American Air Filter Co., 123 Central Ave., Dept. IEN, Louisville 8, Ky.

If you write maker identify as IEN - 0222

DUST COLLECTING . . Automatic air filter has two vertical moving curtains. The first traps dust by oil impingement. The second is dry to remove oil entrainment. Air actually is filtered four times. Bulletin 500, 12 pages. Dollinger Corp., 11 Centre Park, Dept. IEN, Rochester 4, N. Y.

If you write maker identify as IEN - 0223

DUST COLLECTING . . Cone-shaped filter element of the Aerodyne collector has louver openings in its metal surface. How it works and examples in 8-page Bulletin 171. Green Fuel Economizer Co., 920 Main St., Dept. IEN, Beacon, N. Y.

If you write maker identify as IEN - 0224

ELECTRONIC TUBES . . Qualified engineers can secure new 578-page looseleaf manual on letterhead request. List price otherwise is $2. It covers power tubes and rectifiers for industrial and communication use, also thyratrons, magnetrons, vacuum condensers and tube accessories. Amperex Electronic Corp., 230 Duffy Ave., Dept. IEN, Hicksville, N. Y.

If you write maker identify as IEN - 0225

FANS AND BLOWERS . . Axial-flow fans in the company's Vaneaxial design have direct drive and belt drive. Bulletin A-110, 16 pages, has air-delivery ratings. Hartzell Propeller Fan Co., 1025 Roosevelt Rd., Dept. IEN, Piqua, Ohio

If you write maker identify as IEN - 0226

FASTENINGS . . Quick-locking attachment devices for wood and metal furniture to hold legs, rails, feet. "LockFast Furniture Fasteners," 40 pages. Lockfast Mfg. Co., 4111 W. Belvedere Ave., Dept. IEN, Baltimore 15, Md.

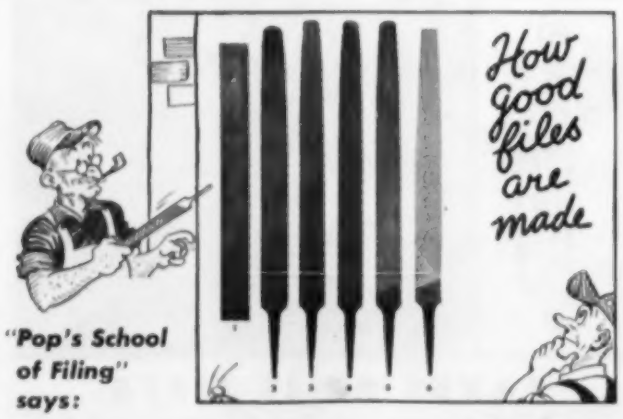
If you write maker identify as IEN - 0227

INSERT FASTENINGS . . Instructions on how to repair a stripped internal thread, using the Heli-Coil screw thread insert, are shown step by step in 4-page Bulletin 654. Standard sizes are listed for the inserts. Heli-Coil Corp., 1467 Shelter Rock Lane, Dept. IEN, Danbury, Conn.

If you write maker identify as IEN - 0228

COOLANT FILTER . . Delpark continuous self-cleaning gravity filter now is available in models to fit Micromatic honing and lapping machines. "Delpark-Micromatic," 4 pages. Industrial Filtration Co., Dept. M-195, Lebanon, Ind.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50



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Nicholson file manufacture extends far beyond the factory —to the steel mills, to the metallurgical laboratory, to industrial users' plants.

Steels, made to specifications, come in bars of various cross-sections; are analyzed, tested, cut to working length (1).

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Annealing, laboratory-controlled, "conditions" steel for uniform texture and for cutting.

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Industrial Distributors are proud to offer you Nicholson or Black Diamond files.

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A FILE FOR EVERY PURPOSE

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LIQUID FILTER . . Filter presses for chemicals, oils, extracts, syrups, liquors; flow rates from 100 gph. to 50,000 gph. and pressures to 75 lb. Details and a table in 4-page Bulletin 17. Brosites Products Corp., 50 Church St., Dept. IEN, New York 7, N. Y.

If you write maker identify as IEN - 0230

FILTERING MATERIALS . . Emulsified oil in boiler feed water? Sorbo-Cel diatomite powder in a standard pressure filter will remove it together with rust, scale, precipitates. Bulletin FA-46A, 8 pages, has instructions. Johns-Manville, 22 E. 40th St., Dept. IEN, New York 16, N. Y.

If you write maker identify as IEN - 0231

LIQUID LEVEL GAGE . . Ultrasonic pulses from a remote generator sound out depth of liquid by an echo-reflecting method. Bulletin S-68, 8 pages, shows schematic circuits on how it works and how to use it. Bogue Electric Mfg. Co., 52 Iowa Ave., Dept. IEN, Paterson 3, N. J.

If you write maker identify as IEN - 0232

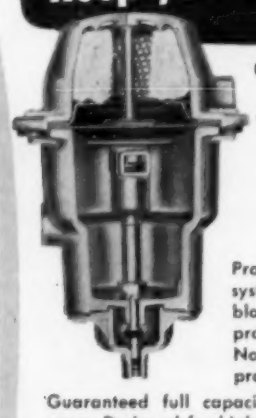
MICROMETER GAGES . . Frames of the Tumico line are tubular and vacuum sealed to minimize weight and dimension change with temperature. Catalog 51-810, 36 pages, presents a range of standard and special models, other gages. DoAll Co., 254 N. Laurel Ave., Dept. IEN, Des Plaines, Ill.

If you write maker identify as IEN - 0233

PRESSURE GAGES . . Low-range units, manometers, inclined-tube units, pitot tubes, draft and differential-pressure gages, gas flow meter, other instruments. "Specialized Gages," 4 pages. F. W. Dwyer Mfg. Co., 317 S. Western Ave., Dept. IEN, Chicago 12, Ill.

If you write maker identify as IEN - 3190

Keep your air lines clean



CUT MAINTENANCE WITH WILKERSON Automatic MOISTURE SEPARATORS

Protect your compressed air system and tools. Automatically blast out water and sludge with practically no pressure drop. No manual draining . . . no lost production . . . labor saving.

Guaranteed full capacity* for the size lines they serve. Designed for high efficiency in forcing condensation. Units for every popular size from 1/4" to 2", low or high pressure. Other efficient Wilkerson models for tanks, compressors, sumps, aftercoolers, etc.

Manual drains also available. Write for literature on your company letterhead.

*Separator-chamber volume and shape are important, with direct ratio to line capacity. No 3/8" unit made serves a 1/2" line adequately.

WILKERSON CORPORATION

3469 S. PLATTE RIVER DRIVE ENGLEWOOD, COLORADO

SERVICE-DISTRIBUTORS IN MOST U.S. CITIES

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300 to 4000 lbs!

ON ALBION'S HIGH-CAPACITY PNEUMATIC TIRE CASTERS . . .

Albion's high-capacity, full pneumatic tire casters are available in a wide range of practical sizes and types as swivel or rigid models . . . *single or dual wheel units* to match any load capacity requirements.

They offer the maximum in both floor and load protection, smoother handling, quiet operation, safety and longer caster life. Their economical cost will amaze you. Inquire and see!

SEMI-PNEUMATICS, Too!—Albion's Semi-Pneumatic Tire Casters are also immediately available . . . as single or dual wheel units, rigid or swivel models, in sizes and capacities to meet your specifications.

Don't forget . . . ask for your copy of Albion's big illustrated caster catalog . . . it's yours for the asking.

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C. J. McDONALD, 365 Yonge St., Toronto

ALBION INDUSTRIES, Inc.
ALBION, MICHIGAN

If you write maker identify as **IEN - 0234**

PRESSURE GAGES . . 124-page Ashcroft Gage Catalog covers indicating and recording designs for pressure, vacuum and compound service, also gage testers, mercury columns, accessories and instructions on gage selection and care. Manning, Maxwell & Moore, Inc., Dept. IEN, Stratford, Conn.

If you write maker identify as **IEN - 0235**

SURFACE ROUGHNESS GAGE . . Profilometer is a direct-reading shop instrument to measure surface roughness height in microinches. What the readings show is described in 8-page Bulletin LT-89. Micrometrical Mfg. Co., 345 S. Main St., Dept. IEN, Ann Arbor, Mich.

If you write maker identify as **IEN - 0236**

GEARS . . Copper plating now can be specified without extra charge on gears, sprockets, shafts made by the company to prevent corrosion and assist run-in. Bulletin 1988, 8 pages, tells about it. Brad Foote Gear Works Inc., 1309 S. Cicero Ave., Dept. IEN, Cicero 50, Ill.

If you write maker identify as **IEN - 0237**

GRINDING MACHINE . . Plenty of knuckle room on the company's pedestal tool grinder with the motor mounted down below in the pedestal and only a spindle between the two wheels. Catalog 5325, 4 pages, gives details. South Bend Lathe Works, 301 E. Madison St., Dept. IEN, South Bend 22, Ind.

If you write maker identify as **IEN - 0238**

HEAT TREATING . . Hardening service for stainless steel parts produces an estimated 2,000 Brinell case with no appreciable dimensional change. Preparation instructions and examples in 64-page "Super Scottsonizing." C. U. Scott & Son Inc., 1510 First Ave., Dept. IEN, Rock Island, Ill.

If you write maker identify as **IEN - 3192**

THE TORRINGTON COMPANY
Specialties Division
900 Field Street, Torrington, Conn.

TORRINGTON SPECIAL METAL PARTS

Makers of Torrington Needle Bearings

NEW LITERATURE—*Continued*

If you write maker identify as **IEN - 0239**

PROCESS HEATING . . Dowtherm vaporizers and heaters for high-temperature low-pressure vapor and liquid-phase process heating. Schematics show nine basic arrangements in 28-page Bulletin A-100. Eclipse Fuel Engineering Co., 1001 Buchanan St., Dept. IEN, Rockford, Ill.

If you write maker identify as **IEN - 0240**

HOISTS . . Hand and power models, ratchet-lever hoists, load binders and pulling tools, I-beam trolleys, utility tools. List prices are included in 8-page Catalog CL. Coffing Hoist Co., 802 Walter St., Dept. IEN, Danville, Ill.

If you write maker identify as **IEN - 0241**

HAND HOIST . . Load King is a chain hoist, ½ to 2 ton in four models, with aluminum-alloy castings and alloy-steel parts so the smallest model weighs 36 pounds. Construction points in 8-page Bulletin P-1254B. Yale & Towne Mfg. Co., 11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa.

If you write maker identify as **IEN - 0242**

WATER HOSE . . Eight types in rubber-fabric construction are for such service as food plants, hydraulic jetting, hot water washout, outdoor building construction. Bulletin, "Water Hose," 4 pages. Quaker Rubber Corp., Comly & Tacony Sts., Dept. IEN, Philadelphia 24, Pa.

If you write maker identify as **IEN - 0243**

INSULATING BOBBINS . . Made of paper and other dielectric materials for motor coils, relays, solenoids. Diagrams show compact wire arrangement possible in bobbin winding. "Bobbin Bulletin," 4 pages. Precision Paper Tube Co., 2033 W. Charleston St., Dept. I-8, Chicago 47, Ill.

If you write maker identify as **IEN - 0244**

THERMAL INSULATION . . Granular petroleum product is poured around hot underground pipes, tamped into place, and covered with earth. Material in contact with pipe fuses into a sheath. Provides insulation and protection against underground corrosion. "Gilsulate," 4 pages. American Gilsonite Co., 1145 E. Jersey St., Dept. IEN, Elizabeth 4, N. J.

If you write maker identify as **IEN - 0245**

THERMAL INSULATION . . Foamglas is a lightweight strong rigid material that is inorganic, waterproof and fireproof. How to use it for building insulation is described in 24-page Bulletin FG-100. Pittsburgh Corning Corp., One Gateway Center, Dept. IEN, Pittsburgh 22, Pa.

If you write maker identify as **IEN - 0246**

VIBRATION ISOLATING . . Bonded-rubber mounts to locate under motors and equipment such as fans, blowers, compressors. Efficiency curves are in 4-page Product Bulletin 537. Barry Corp., 700 Pleasant St., Dept. IEN, Watertown 72, Mass.

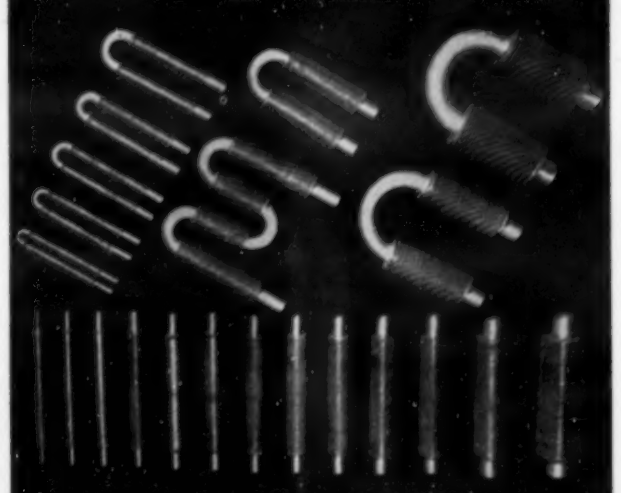
If you write maker identify as **IEN - 0247**

UNIVERSAL JOINT . . Motion is transmitted in the Rzeppa universal joint by hardened steel balls rolling in grooved raceways. The shaft turns uniformly. How it works and how to select size and type are in 12-page "Rzeppa Joint" catalog. Gear Grinding Machine Co., 3305 Christopher, Dept. IEN, Detroit 11, Mich.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3194**

RO-FIN TUBES
IDEAL SURFACE FOR HEAT TRANSFER



Over 100 sizes in production!

ROME
TURNEY RADIATOR COMPANY

200 East Front Street • Rome • New York

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TEMCO HOT PLATE
outstanding performance
handsome appearance

One of a wide line of highly-dependable hot plates, this NEW TEMCO Model 2500 is the finest money can buy in its comparable size range. Top quality throughout, it combines the best in performance plus excellent appearance. Extra sensitive thermostat provides stepless control with less than 3° variation at any point from room temperature to 370° C. (700° F.). Machined smooth cast aluminum surface plate reaches top temperature in 25 minutes, has negligible temperature gradient. Interior of case and your table top protected from heat by scientifically designed ventilating channels. Long, spiraled heating element embedded in refractory plate, replaceable without new surface plate. Dovetail sockets at rear for holding apparatus. $27.50. Write for data and name of nearest dealer.

THERMO ELECTRIC MANUFACTURING CO.
482 HUFF STREET, DUBUQUE, IOWA

If you write maker identify as **IEN - 3196**

production flows smoothly...
at top speed, at all times, yet free of rejects
Kester makes 62 different fluxes to meet any requirements. Why not write our Technical Department for full information?

KESTER SOLDERING FLUX

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4211 Wrightwood Ave., Chicago 39
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ALUMINUM LOUISVILLE

STAGES 20 Inches Wide
PLANKS 12 Inches Wide

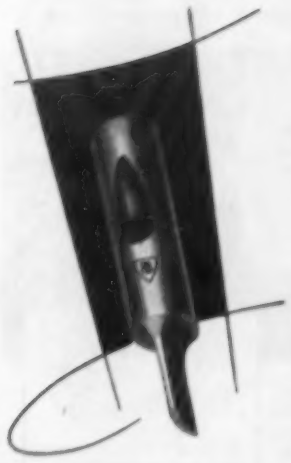
Light weight durable Contractor's Equipment designed for heavy duty service. Made of extruded aluminum rails and rungs securely riveted with the Louisville Safe Weight method for strength and serviceability. Aluminum channel decking ensures light weight — knurled surface provides sure footing.

ALSO COMPLETE LINE OF LADDERS
SEE YOUR DEALER OR WRITE US

LOUISVILLE LADDER COMPANY
1101 W. Oak St. — Dept. 2A — Louisville 10, Ky.

If you write maker identify as IEN - 3198

WHY R-B PUNCHES are Easier to Use



Just a push, a twist, and "click" your R-B punch or die button is accurately ALIGNED and LOCKED in place. The R-B ball lock prevents radial or vertical movement of the punch or die button in the retainer—no additional keying is required.

R-B punches and die buttons are just as easy to remove—simply insert tanged tool in retainer hole to release ball lock. Standardized and completely interchangeable in any shape or size, these easy to use punches and die buttons save your time and energy.

RICHARD BROTHERS PUNCH DIVISION
ALLIED PRODUCTS CORPORATION
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Also Produced in OTHER ALLIED PLANTS
SPECIAL COLD FORGED PARTS • STANDARD CAP SCREWS
PRECISION GROUND PARTS • SHEET METAL DIES MADE OF FERROUS ALLOYS, ZINC ALLOYS OR PLASTICS

If you write maker identify as IEN - 3199

NEW CROWN COLOR CODE PAINT

for quick, easy identification

- JUST SPRAY ON
- HANDY CAN
- WIDE RANGE OF COLORS

THE SIMPLEST WAY TO COLOR CODE FOR:
- Type of Material
- Hardness or Alloy
- Supply Source
- Receiving Date
- "OK" or Reject
- Any Application Where Coding or Identification of Metal Is Needed

Easier to use and faster. Requires no brushes or open containers. Dries dust-free in 5 to 10 minutes, tack-free in 15 to 20 minutes and hard in one to two hours. Full bodied, with excellent "tooth" for firm adhesion, even to dirty or semi-greasy surfaces. Eliminates most need for surface preparation. Resists rubbing off or weathering outdoors. Fast, opaque colors.

$1.59 PER 12-OZ. CAN (without spray head)
SPRAY HEAD 15c EXTRA

18 COLORS . . . ORDER BY NUMBER

No.	Color	No.	Color	No.	Color
10	Red	16	Brown	23	Black
11	Green	17	Pink	25	Aluminum
12	Yellow	19	Light Gray	36	Dark Gray
13	Dark Blue	20	Orchid	39	Clear
14	Orange	21	Copper	40	Tool Gray
15	Light Blue	22	White	41	Flat Black

Prices F.O.B. Woodstock, Illinois.
15% discount in case lots of 12 cans of one color. Freight allowed on shipments of 8 cases or more. Applicable state or local sales tax extra. Prices subject to change without notice.

CROWN INDUSTRIAL PRODUCTS COMPANY
715 Amsterdam Ave., Woodstock, Illinois
Please ship me the following CROWN Color Code Paints:

Quantity _____ cans of Color No. _____ Quantity _____ cans of Color No. _____
_____ cans of Color No. _____ _____ cans of Color No. _____
_____ cans of Color No. _____ _____ cans of Color No. _____
_____ cans of Color No. _____ _____ cans of Color No. _____
_____ (indicate separately) Spray Heads at 15c each

COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____
_____
Authorized Signature

NEW LITERATURE—Continued

If you write maker identify as IEN - 0248

PLANT LAYOUT . . Three-dimensional scale models to assist in plant layout, product visualization, site development, sales training. "Industrial Models," 4 pages. Knight Models, 600 W. Jackson Blvd., Dept. IEN, Chicago 6, Ill.

If you write maker identify as IEN - 0249

LAYOUT PLATES . . Bench and floor surface plates, also lapping plates, angle plates, parallels, V-blocks, benches with 2-inch cast iron tops. Catalog 838, 20 pages. Challenge Machinery Co., Dept. IEN, Grand Haven, Mich.

If you write maker identify as IEN - 0250

LUBRICATING MATERIALS . . Three silicone products to serve as mold release agents in foundry shell-molding process. Preparation, properties and uses are detailed in 8-page Bulletin F-8271-A. Linde Air Products Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN - 0251

PRECIOUS METALS . . Picture story on facilities and activities of the company's new Research Center building is given in 36-page Bulletin 4376, "Research". Platinum metals, gold and silver and their applications are covered. Baker & Co., 113 Austin St., Dept. IEN, Newark 5, N. J.

If you write maker identify as IEN - 0252

FLOW METERS . . Standardized stock instruments for process control are float-tube design. Selection nomographs, a range of models, list prices, sight flow indicators in 20-page Catalog 2, just released. Fischer & Porter Co., 924 Jacksonville Road, Dept. IEN, Hatboro, Pa.

If you write maker identify as IEN - 0253

MILLING CUTTERS . . Pocket catalog of 52 pages on plain milling cutters, side-milling cutters, metal-slitting saws, keyseat and T-slot cutters, end mills, angle cutters. Ask for Condensed Catalog 2. Goddard & Goddard Co., 12282 Burt Road, Dept. IEN, Detroit 23, Mich.

If you write maker identify as IEN - 0254

MILLING MACHINES . . Plain, universal, knee-type, vertical, bed-type, rotary-head machines, also standard attachments, boring machines, grinding machines. Catalog KT-54, 64 pages. Kearney & Trecker Corp., 6784 W. National Ave., Dept. IEN, Milwaukee 14, Wis.

If you write maker identify as IEN - 0255

MOTOR COMMUTATORS . . Mica-insulated copper commutators made to specification to suit the job. Catalog, "Modern Commutation," 16 pages, shows how they are made, lists standard sizes, gives ordering data. Han-Kor Inc., 9520-I Richmond Ave., Dept. IEN, Cleveland 5, Ohio

If you write maker identify as IEN - 0256

ELECTRIC MOTORS . . Low-speed synchronous units for 450 rpm. and under, ratings of 100 hp. and up, intended to drive air or gas compressors. Four-page Bulletin 05-B-8008 gives construction points and uses. Allis-Chalmers Mfg. Co., 909 S. 70th St., Dept. IEN, Milwaukee 14, Wis.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 0257

LABORATORY OVEN . . Design of the Isotemp oven combines insulation, heat conductivity through sheet aluminum, heater placement, flow path of warm air, to produce uniform temperature. Bulletin FS-230, 8 pages. Fisher Scientific Co., 717 Forbes St., Dept. IEN, Pittsburgh 19, Pa.

If you write maker identify as IEN - 0258

PROCESS OVENS . . Bulletin 200 provides a 12-page review on industrial ovens including batch, compartment, belt conveyor, overhead, festoon-conveyor, vertical designs, with notes on applications of each. W. W. Sly Mfg. Co., 4700 Train Ave., Dept. IEN, Cleveland 2, Ohio

If you write maker identify as IEN - 0259

ELECTROSTATIC PAINTING . . Overspray is no problem with the company's No. 2 process. Paint atomization is by a rotating plate in an electrostatic field with no air pressure required. Paint is attracted to the work. "No. 2 Process," 16 pages. Ransburg Electro Coating Corp., Sanders at Barth, Dept. IEN, Indianapolis 7, Ind.

If you write maker identify as IEN - 0260

FENCE PAINTING . . Roller-type tools can paint a chain-link fence for a total cost of 3 cents per square foot, says new 32-page "FencePainteR" catalog. It gives instructions for use also on bar and picket fence, masonry, galvanized buildings, steel tanks, building interiors. Fence Painter Corp., 2314 W. Van Buren St., Dept. IEN, Chicago 12, Ill.

If you write maker identify as IEN - 0261

GLASS PIPE . . Flanged design in ¼ to ¾-in. sizes, together with available fittings, is made from Pyrex tube. Assembled lines can be used for process piping, sampling lines, instrument connections. List prices in 4-page Bulletin SG-11. Sentinel Glass Co., Dept. IEN, Hatboro, Pa.

If you write maker identify as IEN - 3201

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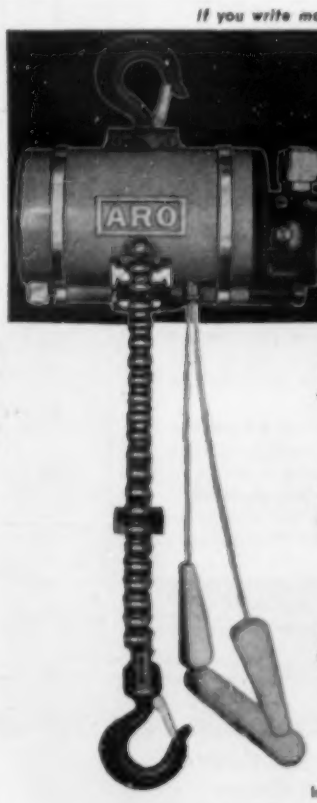

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HARD RUBBER PIPE . . Made of Buna N synthetic and natural rubber for chemical service, also centrifugal pumps, valves, fittings of the same materials. Chemical resistance data in 4-page "Buna N" folder. Vanton Pump & Equipment Corp., 7308 Empire State Bldg., Dept. IEN, New York 1, N. Y.

If you write maker identify as **IEN - 0263**

METAL PIPE . . Lightweight spiral-seam pipe in sizes from 4 to 30 in. has wall thickness of .0747 to .1644 inches. It will handle air, water, oil, sludge, vacuum. Bulletin 507, 4 pages. Naylor Pipe Co., 1230 E. 92nd St., Dept. IEN, Chicago 19, Ill.

If you write maker identify as **IEN - 0264**

PIPE COILS . . Engineering data book of 36 pages on heating and cooling surfaces of pipe coils and fin coils is intended as a guide to design. Please use letterhead in requesting Bulletin 1053, otherwise $1.50. Rempe Co., 340 N. Sacramento Blvd., Dept. IEN, Chicago 12, Ill.

If you write maker identify as **IEN - 0265**

PLASTIC MATERIALS . . How they are employed in packaging is subject of 8-page Booklet G-21, "1954 Guide to Improved Packaging . .". It describes molded and blown plastics, coatings, adhesives, film, rigid sheet. Bakelite Co., 300 Madison Ave., Dept. IEN, New York 17, N. Y.

If you write maker identify as **IEN - 0266**

PLASTIC RESINS . . Acrylic copolymer emulsions produce films which range from soft rubbery tacky types to hard tough non-blocking materials. Properties and how to use them are in new 20-page "Polyco" Bulletin P-57. American Polymer Co., 101 Foster St., Dept. IEN, Peabody, Mass.

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NEW LITERATURE—*Continued*

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PLASTIC TUBE . . Transparent flexible product for temporary or permanent fluid lines is tough, light, odorless, non-toxic, chemical resistant and can be steam sterilized. Sizes and list prices in 4-page "Ace-Flex". American Hard Rubber Co., 93 Worth St., Dept. IEN, New York 13, N. Y.

If you write maker identify as **IEN - 0268**

HAND HYDRAULIC PRESS . . Lever-operated unit builds up 20 ton of pressure between two sets of platens on three tie-rods. Bulletin 341-A, 4 pages. Loomis Engineering & Mfg. Co., 126 S. 14th St., Dept. IEN, Newark 7, N. J.

If you write maker identify as **IEN - 0269**

KNUCKLE PRESSES . . Fifteen models for coining, embossing, sizing and other squeezing operations are rated at 100 to 6,000 ton. Catalog K-53, 8 pages. Verson Allsteel Press Co., 9325 S. Kenwood Ave., Dept. IEN, Chicago 19, Ill.

If you write maker identify as **IEN - 0270**

PRESS ATTACHMENTS . . Roll feeds, slide feeds, stock reels, coil cradles, stock oilers, scrap choppers, straighteners. Catalog, 16 pages. Durant Tool Supply Co., 155 Orange St., Dept. IEN, Providence 3, R. I.

If you write maker identify as **IEN - 0271**

PRESS TOOLS . . Tool-steel composite die sections to use on sheet metal, also cast-to-shape tool steel for dies, gages and parts, and a section on smooth hammered forgings, make up new 28-page Booklet FC-4. Allegheny-Ludlum Steel Corp., 2020 Oliver Bldg., Dept. IEN, Pittsburgh 22, Pa.

If you write maker identify as **IEN - 0272**

PRESS TOOLS . . Hole-punching units for mild steel to ¼ in. have capacity to .625 and .875 in. in maximum diameter. Bulletin JD, 4 pages. Wales-Strippit Corp., 361 Payne Ave., Dept. IEN, North Tonawanda, N. Y.

If you write maker identify as **IEN - 0273**

PRESS TOOLS . . Forming dies for press brakes. Outline drawings in 8-page "Forming Dies" bulletin show some of many available for prompt delivery along with a chart of tons required by thickness and die size. Rafter Machine Co., 259 Stephens St., Dept. IEN, Belleville 9, N. J.

If you write maker identify as **IEN - 0274**

PUMPS . . Centrifugal, condensate, turbine pumps are summarized in 8-page Selection Guide. Details follow a tabular index chart. Aurora Pump Co., Div. New York Air Brake Co., Loucks St., Dept. IEN, Aurora, Ill.

If you write maker identify as **IEN - 0275**

RECIPROCATING PUMP . . Single and duplex models for pressures to 20,000 lb. and delivery from .02 to 12.3 gpm. are for controlled-capacity and liquid-proportioning service. Bulletin P-1153, 12 pages. Philadelphia Pump & Machinery Co., Wynnewood Ave., Dept. IEN, Wynnewood, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

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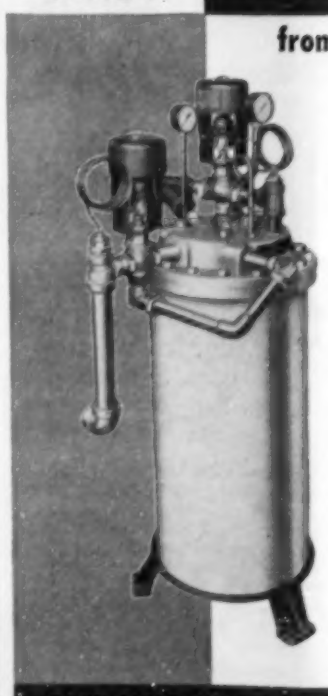

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Fig. 1

Fig. 2

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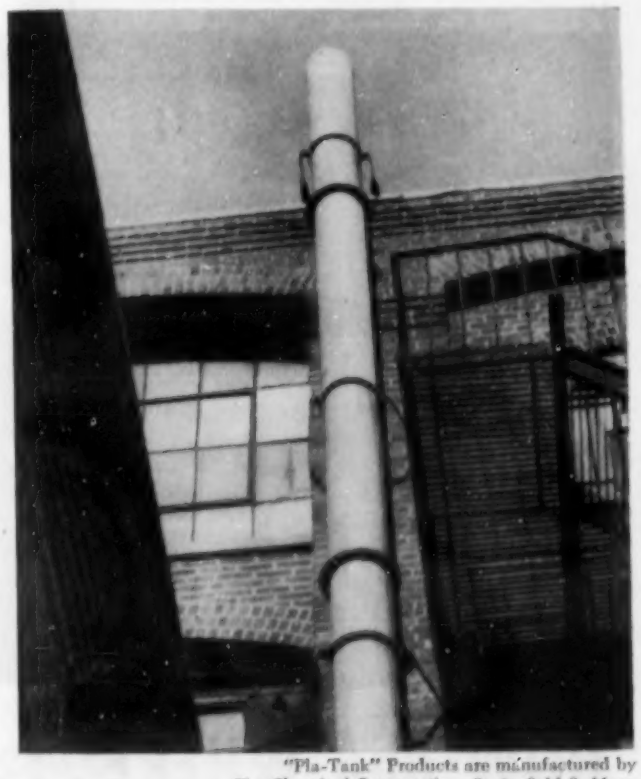

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NEW LITERATURE—Continued

If you write maker identify as IEN - 0276

ROTARY PUMP . . Rotors of the Hydrex pump are continuous-tooth herringbone gears that will handle liquids with sufficient lubricating properties. Manual H-1, 4 pages, gives installation and operating instructions. Sier-Bath Gear & Pump Co., 9252 Hudson Blvd., Dept. IEN, North Bergen, N. J.

If you write maker identify as IEN - 0277

TURBINE FIRE PUMPS . . Vertical turbine pump to provide adequate fire-fighting water from a well, stream, reservoir, 500 to 1,500 gpm. Bulletin W-450-B42, 6 pages. Worthington Corp., 423 Worthington Ave., Dept. IEN, Harrison, N. J.

If you write maker identify as IEN - 0278

PYROMETER ACCESSORIES . . Sealed glands permit use of bare-wire thermocouples under pressures from vacuum to 15,000 pounds. Response curve, list prices, protection tubes and thermocouple-wire resistance table in 16-page Catalog 1530. Conax Corp., 4515 Main, Dept. IEN, Buffalo 21, N. Y.

If you write maker identify as IEN - 0279

RACKS . . Channel-shaped interlocking brackets to support electric conduit, instrument tubes, cable and pipe. Catalog 853, 8 pages, shows how. Rakit Corp., 711 S. 50th St., Dept. IEN, Philadelphia 43, Pa.

If you write maker identify as IEN - 0280

RECORD KEEPING . . Printed forms for maintenance control including request, order, scheduling, job assignment, preventive maintenance, are illustrated in 6-page Folder A-699 together with boards and holders. McCaskey Register Div., Victor Adding Machine, Dept. IEN, Alliance, Ohio

If you write maker identify as IEN - 0281

SELENIUM RECTIFIERS . . Selected types for color TV circuits are summarized in 4-page "Color Television Rectifiers" by regulation curves and circuit diagrams. Sarkes Tarzian, Inc., 415 N. College, Dept. IEN, Bloomfield, Ind.

If you write maker identify as IEN - 0282

TIME DELAY RELAY . . Electrically-actuated pneumatic unit comes in two types, one to start time delay when the coil is energized, the other to provide delay upon deenergization. It can provide a two-step delay or a momentary impulse. Bulletin SR-4, 4 pages. AGA Div., Elastic Stop Nut Corp., 1027 Newark Ave., Dept. IEN, Elizabeth, N. J.

If you write maker identify as IEN - 0283

EXPLOSIVE RIVETS . . Small explosive charge is set off by an applicator tool on the head end to expand the opposite end of the company's blind rivet. Installation instructions and examples of use in 36-page Catalog A-6666. E. I. du Pont de Nemours & Co., Explosives Dept. IEN, Wilmington 98, Del.

If you write maker identify as IEN - 0284

ROCK DRILLING . . Portable pneumatic tool for paving breaker, demolition, clay digger, pick, pile-driver, tamper service. Form 4127-A, 8 pages. Ingersoll-Rand Co., 746 Morris Ave., Dept. IEN, Phillipsburg, N. J.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3213

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If you write maker identify as IEN - 0285

ROLLING . . Laboratory and production rolling mills have 3 and 4-in. rolls for flat strip, wire, shapes. Bulletin 121, 8 pages, shows designs possible. Stanat Mfg. Co., 47-28 37th St., Dept. IEN, Long Island City 1, N. Y.

If you write maker identify as IEN - 0286

RUBBER PRODUCTS . . Custom molder of rubber, synthetic rubber, silicones also makes gaskets and dipped products, and handles Hewitt-Robins conveyor belt, hose, foam rubber products. "Engineers in Rubber," 12 pages. J. M. Cranz Co., 2671 Main St., Dept. IEN, Buffalo 14, N. Y.

If you write maker identify as IEN - 0287

SAW BLADES . . Carbide-tipped circular blades for radial sawing machines are intended to cut wood, laminates, plastics, aluminum, asbestos board, similar materials. Bulletin AD-808, 4 pages. Rockwell Mfg. Co., Delta Power Tool Div., 624 N. Lexington Ave., Dept. IEN, Pittsburgh 21, Pa.

If you write maker identify as IEN - 0288

SPRINGS . . Heavy-duty springs for presses, shears, cars and railroad equipment are made of ⅜ to 3-in. bar stock. Pictures show how in 36-page catalog. Henry Miller Spring & Mfg. Co., 101 Davidson St., Dept. IEN, Pittsburgh 15, Pa.

If you write maker identify as IEN - 0289

STATIC ELIMINATING . . Liquid material in 12-oz. pressurized spray cans to discharge static around process machines, textile equipment, other operations. Folder, 4 pages. Statikil, 1220 W. 6th St., Dept. IEN, Cleveland 13, Ohio.

If you write maker identify as IEN - 3214

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STRAPPING . . Application tools for ¾ and 1¼-in. flat steel strapping, together with accessories such as corner protectors, anchor plates. "Heavy Duty," 8 pages. Gerrard Steel Strapping Div., United States Steel Corp., 2915 W. 47th St., Dept. IEN, Chicago 32, Ill.

If you write maker identify as **IEN - 0291**

PAINT STRIPPING . . Instructions on using 11 materials to remove paint and other finishes from steel, iron, wood, aluminum, magnesium and to clean engines. Bulletin, "Paint Strippers," 13 typewritten sheets. Octagon Process Inc., 15 Bank St., Dept. IEN, Staten Island 1, N. Y.

If you write maker identify as **IEN - 0292**

MERCURY SWITCHES . . Glass-tube designs in standard, small, sensitive, heavy-duty and protected models. Mounting methods and application suggestions in 12-page Catalog 90. Micro Division, Minneapolis-Honeywell Regulator Co., 30 E. Spring St., Dept. IEN, Freeport, Ill.

If you write maker identify as **IEN - 0293**

PARTICLE SIZE TESTING . . Micromerograph is an instrument that provides rapid particle-size distribution measurements on powdered materials. How it works is described in 10-page Bulletin 101 with examples. Sharples Corp., Research Laboratories, 424 W. 4th St., Dept. IEN, Bridgeport, Pa.

If you write maker identify as **IEN - 0294**

THERMOMETERS . . Catalog 6709 has 44 pages of data on remote-bulb thermometers in indicating, recording, controlling models. Minneapolis-Honeywell Regulator Co., Wayne & Windrim Aves., Dept. IEN, Philadelphia 44, Pa.

If you write maker identify as **IEN - 3216**

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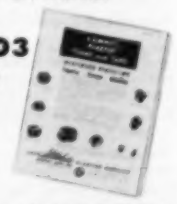

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NEW LITERATURE—*Concluded*

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STEAM TRAPS . . Speed of venting is a feature of "Heat-Kwik" steam traps. It is accomplished by having two separate orifices, one for condensate and one for air. Bulletin 1153, 4 pages, has a diagram on how it works. V. D. Anderson Co., 1935 W. 96th St., Dept. IEN, Cleveland 2, Ohio

If you write maker identify as **IEN - 0296**

LIFT TRUCK . . Fork design, 2,000-lb. capacity, comes in 68 and 83-in. lift models, both battery powered. Summary is given in four-page Folder B-464. Elwell-Parker Electric Co., 4205 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio

If you write maker identify as **IEN - 0297**

LIFT TRUCKS . . Picture summary on power and hand lift trucks, portable and fixed elevators, cranes, barrel dumpers, turn tables, skids, carries references to detail literature available on each. Bulletin PI, 4 pages. Revolvator Co., 8706 Tonnelle Ave., Dept. IEN, North Bergen, N. J.

If you write maker identify as **IEN - 0298**

FLEXIBLE METAL TUBE . . How it is used for hose, conduit, pneumatic conveyor, diesel exhaust, ventilation duct, is shown with types, sizes, fittings in 8-page "Flexineering," letterhead request. Pennsylvania Flexible Metallic Tubing, 72nd & Powers Lane, Dept. IEN, Philadelphia 42, Pa.

If you write maker identify as **IEN - 0299**

VALVE . . Prevention of surge and water hammer is one of several functions performed by Type-CCAV 4-in. valve. It controls speed of closure and can serve as a vacuum breaker. Details in 6-sheet typewritten report. Simplex Valve & Meter Co., 6717 Upland, Dept. IEN, Philadelphia 42, Pa.

If you write maker identify as **IEN - 0300**

RELIEF VALVE . . Hydraulic unit has 350 to 5,000-lb. rating in ¼ to ¾-in. sizes. Working parts are removable in cartridge form so no lines need be broken in servicing. Color-coded schematic in 4-page Bulletin AD. Pantex Mfg. Corp., 521 Roosevelt Ave., Dept. IEN, Pawtucket, R. I.

If you write maker identify as **IEN - 0301**

ROOF VENTILATOR . . Airlift design includes a centrifugal fan to provide positive exhaust against static pressure. Certified capacities in 8-page Bulletin AL-2. Swartwout Co., 18511 Euclid Ave., Dept. IEN, Cleveland 12, Ohio

If you write maker identify as **IEN - 0302**

WHEELS . . Rubber-tire steel disc wheels with load capacity from 30 to 715 lb. to use in products from toys to tractors. "Disc Wheels," 8 pages. La Grange Metal Products, 4125 W. Washington Blvd., Dept. IEN, Hillside, Ill.

If you write maker identify as **IEN - 0303**

WINCHES . . Hand and power models, derricks, material elevators, hoists, blocks, sheaves and accessories, also a truck takeoff winch. Catalog, 16 pages. Sasgen Derrick Co., 3129 Grand Ave., Dept. I-8, Chicago 22, Ill.

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If you write maker identify as **IEN - 3218**

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If you write maker identify as **IEN - 3220**

Inductrols ...via Graybar

Undervoltage cuts equipment output and efficiency . . . ups maintenance costs. Overvoltage shortens equipment life . . . increases manufacturing and replacement costs. But by using G-E Inductrols on secondary circuits you can automatically maintain correct voltages for all a-c electric equipment. Housed in all-steel cabinets enclosing all live parts, you can install these dry-type regulators anywhere.

FREE 2 bulletins tell complete story of dry-type induction voltage regulators

Application, construction, and operating details on the wide range of standard G-E Inductrols are covered—types for manual and automatic operation . . . single- and three-phase applications . . . units for circuits up-to-and-including 500 kva, 600 volt. Send for your free copies, today. *Graybar Electric Company, Inc., Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*
406-123

Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as **IEN - 3221**

Defeat your "Arc Enemy" with CONTACT PROTECTORS

A unique application of SELENIUM RECTIFIERS developed by *Federal*
TO PUT AN END TO ARCING CONTACTS

Contact Protectors by *Federal* are a *sure* way to economy and longer life for relay contacts . . . to eliminate circuit failure and interference caused by arcing.

Now you can throw away your slide rule! . . . Select the Contact Protector for *your* application from Federal's extensive list.

Designed for use in AC or DC circuits . . . small in size . . . with pigtail leads for easy mounting. For full information, write to Federal, Dept. F-123.

Federal Telephone and Radio Company
SELENIUM-INTELIN DEPARTMENT
100 Kingsland Road Clifton, N. J.

If you write maker identify as IEN - 3222

If you write maker identify as IEN - 3223

Nearly 20 Years Experience Behind GENUINE CLIPPER PRODUCTS

The unqualified Clipper guarantee of satisfaction is backed by world-wide experience, the ability to select the finest materials and the "know-how" to put them together.

DON'T GAMBLE!
You are GUARANTEED ECONOMY with CLIPPER SUPERIOR BLADES!

. . . all specifications of Abrasive, Diamond and "CBR" (Break-Resistant) Blades guaranteed to "Consistently Provide the fastest cut . . . at the lowest cost . . . with the greatest ease!"

FREE TRIAL!

Discover how Clipper will increase profits by increasing production at reduced costs. "ON THE JOB" FREE TRIAL guarantees satisfaction at NO OBLIGATION.

PATENTED CLIPPER FEATURES

PRESSURE EQUALIZER
Automatically Cushions Blade for Longer Life.

SELECT-A-NOTCH
Instant Adjustment for Any Size Material.

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH —SEE BELOW

Clipper

SAVE BY SAWING REPAIR PATCHES and TRENCHES
IN FLOORS—RUNWAYS —STREETS with a CLIPPER "CONSAW"
5 MODELS—
GAS OR ELECTRIC POWERED

MANUFACTURING CO.
• CINCINNATI • ATLANTA
• BOSTON • DETROIT
• WASHINGTON, D.C. • PITTSBURGH
• CHARLOTTE, N.C. • NEW YORK
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• CLEVELAND
• ST. LOUIS • LOS ANGELES
• CHICAGO • INDIANAPOLIS
• HOUSTON • ST. PAUL
• AUSTIN, TEXAS • MILWAUKEE
• SAN FRANCISCO • DALLAS
IN CANADA, P.O. BOX 476, WINDSOR ONTARIO

TEAR OUT AND MAIL!
CLIPPER MANUFACTURING CO.
11 E. 28th STREET, KANSAS CITY, MO.
Send FREE Literature and Prices on:
☐ CLIPPER MASONRY SAWS ☐ DUSTLESS MODELS ☐ DRY-ONLY MODELS
☐ CLIPPER CONSAWS
☐ CLIPPER ABRASIVE BLADES ☐ WET ☐ DRY
☐ CLIPPER DIAMOND BLADES
98 IND
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as IEN - 3225

HEATING . . Petroleum gas torch for brazing, melting, soldering

Source: TURNER BRASS WORKS
825 Park Ave., Dept. IEN, Sycamore, Ill.

Catalog Sheet 500

The fuel tank, forming the body of this new torch, measures 2⅞ in. in diameter by about 9½ in. in height. It is replaced by a refill unit when it has been emptied. The liquefied petroleum gas feeds through a control valve to the burner or into the soldering tip. Burner and fittings are made of brass. Available accessories include a heavy duty burner, a pointed soldering tip, a chisel point tip and a flame spreader. List price is about $7. Replacement fuel tanks are about $2.

If you write maker identify as IEN - 3226

RECTIFYING . . Selenium assemblies, rate 3½ to 100 kw., 3 phase input

Source: THER ELECTRIC & MACHINE WORKS
17 S. Jefferson St., Dept. IEN, Chicago 6, Ill.

Removable panels for access

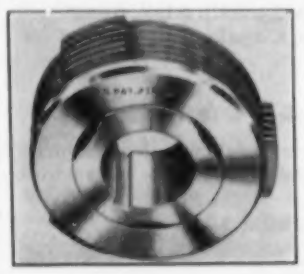
The company announces new design of its standard line of selenium rectifiers, previously described IEN-8794-49, to include 10 ratings between 3½ and 50 kw. in standardized rectangular housings. Additional sizes, to 100 kw. or higher, are designed to meet given requirements.

The smallest unit housing measures 21 by 18 by 36 inches. The 50-kw. assembly measures 48 by 42 by 52½ inches. Terminal boxes for input and output on the two sides add 4 to 6 in. each in the standardized units. Construction is characterized by the small number of plates in series and resulting first class regulation. Input is from 220-volt 3-phase ac.

If you write maker identify as IEN - 3227

DRIVE . . Friction disc assembly available to build into a machine

Source: CARLYLE JOHNSON MACHINE CO.
Box 293, Dept. IEN, Manchester, Conn.



Patented

Maxitorq Disc-Pac is a new self-contained assembly of friction discs, separator springs and locking plate to apply as a unit for clutch or brake duty in a machine. The hub keys to a shaft and can be replaced readily employing Maxitorq stock parts.

Eight disc diameters range from 2 to 8 in. with rating at ¼ to 15 hp. at 100 rpm. Three driving lugs are employed on the smallest size, twelve on the largest one. The Disc-Pac fits standard Maxitorq driving rings. Assembly, dis-assembly and adjustment can be made without tools.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3228

MORE LIGHT . . . LOWER COSTS WITH

MERCURY VAPOR LAMPS

400W
JH-1
Approx. Lumens 18,000
Average life
5,000 hours

The new high intensity Amplex Mercury Vapor Lamps for industrial and large area outdoor lighting bring completely new standards of efficiency and economy. Compared with incandescents, they provide almost twice the light for the same wattage consumed . . . and the JH-1 lamp is color-corrected to give a warm, neutral brilliance.

Besides that, Amplex Mercury Vapor Lamps have several times the burning life of ordinary lamps and reduce replacement costs. They come in a range of sizes and include lamps designed for *black light* applications. Write for the whole story.

Amplex Corporation, Dept. X-3, 111 Water St., Brooklyn 1, N. Y.

AMPLEX

Sealed-Beam Reflector Lamps, Colorbeam Lamps, Spotlites and Floodlites, Industrial Infra-Red Heat Lamps, Vibration and Rough Service Lamps, Street Lighting Lamps, Traffic Signal Lamps, Incandescent Lamps, Fluorescent Tubes, Display Accessories.

If you write maker identify as IEN - 3229

FAST... EFFICIENT materials-handling with Colson casters

There's a COLSON Caster designed to meet every industrial materials-handling requirement—*exactly.* Old, bumpy hard-to-handle equipment can be restored to its original efficiency quickly and economically with COLSON Casters. Other COLSON materials-handling equipment includes hand trucks, barrel and drum trucks, platform trucks and lift-jack systems. Write us or consult the yellow pages (under "Casters" or "Trucks, industrial") for the COLSON office near you.

Write for new catalog "COLSON Trucks and Casters"

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS LIFT-JACK SYSTEMS INDUSTRIAL TRUCKS

If you write maker identify as IEN - 3230

If you think you can't afford a paint circulating system, *Here's News*

● Ever say, "We can't justify an expensive, highly engineered paint spray system?" If so, you should see the new low-cost Paintmaster circulating systems perfected by Graco.

These Graco Paintmasters are air-operated, pumping paint directly from 5 or 55 gallon original containers. No messy, costly transferring . . . and *drums do not carry pressure.* Paintmasters can supply up to 8 spray guns each, in booths hundreds of feet from your supply room. First cost is unusually low, and it's an easy system to maintain.

In the sample system shown below, one Paintmaster supplies the system while one prepares the next drum for simple, instantaneous changeover.

Write for new Paintmaster Circulating System Literature.

GRACO
Paintmaster
GRAY COMPANY, INC.
Engineers & Manufacturers
31 Graco Square
MINNEAPOLIS 13, MINN.
Regional Offices:
New York, Philadelphia, Detroit, Chicago, Atlanta, San Francisco

If you write maker identify as IEN - 3231

How to Cut Cleaning Costs with **WASTE RECEPTACLES**

IN YOUR PLANT

Everybody is automatically a member of your cleaning department by conveniently placing Bennett Bilt Waste Receptacles to invite their use. These waste receptacles are sanitary, economical and a major help to cleanliness and neatness. Put them to work for you and reduce cleaning costs.

BENNETT
WASTE RECEPTACLES
HAVE ALL THESE FEATURES

- Non-rusting stainless steel feet eliminate rusting and rust marks
- Made of extra heavy-gauge corrosion resistant steel
- All welded construction
- Smooth exterior surface . . . nothing to catch and tear clothes
- Reinforced corners
- Self-closing mechanism assures closed doors when not in use and permits easy opening of independent doors with finger-tip pressure
- Rounded corners for structural strength and pleasing appearance
- Baked enamel finish . . . white or green

• These are a few of the many features that make Bennett Bilt Waste Receptacles a natural "buy".

THE BENNETT MANUFACTURING COMPANY
ALDEN, N. Y.

If you write maker identify as IEN - 3232

WHAT MAKES Delta's NEW DIRECT FIRED OIL UNIT HEATER SO SUPERIOR?

1. GUN-TYPE BURNER!
2. 220,000 BTU/HR. OUTPUT!
3. ADJUSTABLE LOUVRES!
4. 5,730 CFM AIR DELIVERY!
5. VERTICAL FLUE TRAVEL!
6. SELF POSITIONING BURNER MOUNT!
7. SUMMER AIR CIRCULATION!
8. AUTOMATIC HUMIDIFIER!
9. LOW OPERATING COSTS!
10. FACTORY WIRING & ASSEMBLY!
11. RUGGED CONSTRUCTION!
12. 59 COMMERCIAL APPLICATIONS!

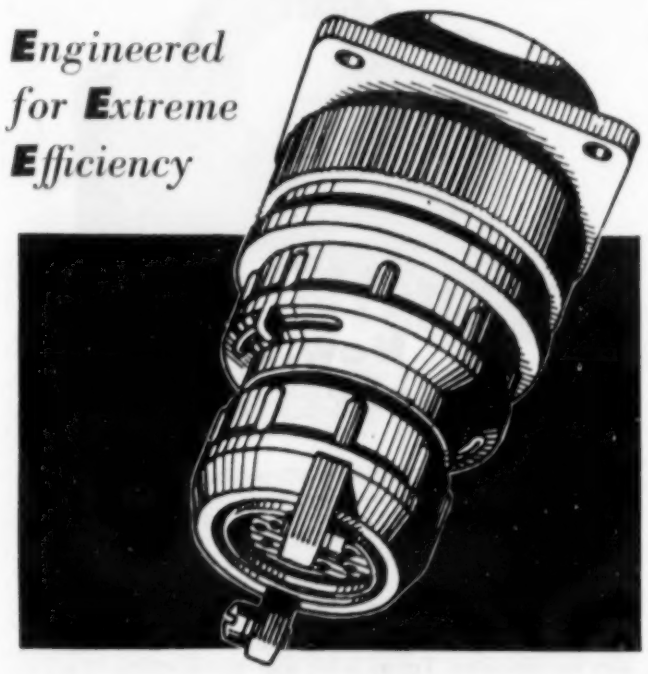
NEVER BEFORE A UNIT LIKE THIS! NEVER BEFORE A DEMAND LIKE THIS!

To efficiently heat offices and closed partitioned areas, see the DELTA line of SUSPENDED-HORIZONTAL FURNACES in various sizes for small or large heating jobs. ***CONTACT US RIGHT AWAY FOR DETAILS***

DELTA HEATING CORPORATION, TRENTON 8, NEW JERSEY
In Canada — Kresno-Stamm • Montreal 24, Canada

If you write maker identify as IEN - 3233

Engineered for Extreme Efficiency



the NEW E AN- ENVIRONMENT RESISTANT

Bendix ELECTRICAL CONNECTOR

The extreme performance requirements of today's high altitude planes are responsible for the development of this new "E" type connector.

The challenge to protect sensitive airborne electronic circuits from thermal shock, surface condensation and extreme vibration has been successfully met by Bendix engineers in this new spaced grommet "E" connector.

This connector is not only designed for performance, but is also engineered for your production needs. The open space in the solder-well area provides ample room for all assembly and soldering operations. Moisture-proofing is accomplished without the use of potting compounds, permitting completely serviceable aircraft harness installations. These features are all accomplished with no appreciable increase in weight over an AN-A/B connector with a cable clamp.

Our Sales Department will be glad to furnish complete information on request.

FEATURES
- Moisture-proof
- Vibration-proof
- Pressurized
- Corrosion Resistant
- Serviceable

Bendix

SCINTILLA DIVISION of Bendix AVIATION CORPORATION
SIDNEY, NEW YORK

FACTORY BRANCH OFFICES: 117 E. Providencia Ave., Burbank, Calif. • 8401 Cedar Springs Road, Dallas 19, Texas • Stephenson Bldg., 6560 Cass Ave., Detroit 2, Michigan • 512 West Avenue, Jenkintown, Pa. • Brouwer Bldg., 176 W. Wisconsin Ave., Milwaukee, Wisc. EXPORT SALES: Bendix International Division, 205 East 42nd St., N. Y. 17, N. Y.

If you write maker identify as IEN - 3235

TIMING . . Electric stop clock reads elapsed and closed circuit time

Source: JAS. P. MARSH CORPORATION
3501 Howard St., Dept. IEN, Skokie, Ill.

White marking on black dial

Closed circuit, or equipment operating time, in any overall interval, is read by two pointers traveling over the face of the 24-hr. dial in this new Serviceman Timer. The dial is graduated in 15-min. intervals with numerals every two hours. A white pointer reads elapsed time and a red pointer reads closed circuit time, during which the equipment under test is in actual operation.

One design applies on equipment rating ¾ hp. or less on 110-volt 60-cycle input. It connects between the test equipment and the power source in series by plugging its extension cord into the power source and by plugging the equipment into a socket in the back of the aluminum housing. A second unit carries two sets of leads and plug-in connectors to operate in parallel in a 220-volt 60-cycle power line with equipment of any motor rating. A hasp is provided to lock the cover to prevent tampering.

If you write maker identify as IEN - 3236

PRESS . . Inverted hydraulic has 6 in. stroke and 100 ton rating

Source: WALTER P. HILL INCORPORATED
22183 Telegraph Road, Dept. IEN, Detroit 19, Mich.

Built to order

Motor driven pumping equipment, mounted on an oil reservoir, supplies pressure at 1,000 lb. to a main hydraulic cylinder, flange mounted on the bottom face of the base plate of this new machine. The cylinder piston is connected to move corner rods, down and up, to operate the upper die plate through a 6-in. stroke. This plate can be adjusted on the rods for maximum open height of 27 inches. Pressure from the pump passes through a 5 to 1 booster to provide 5,000 lb. per sq. in. in main cylinder.

The press is shown tooled, in the illustration, to bend short lengths of straight tube into 90 and 180-deg. turns by means of a holding die and an auxiliary 75-ton cylinder mounted in horizontal position. The main cylinder is employed to close the die after a tube length has been positioned. Then the auxiliary cylinder forces the tube endwise into the curved die section to complete the forming operation. Control centers at a pair of push buttons. The pump motor rates 20 hp. The pump delivers 30 gallons per minute.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3237

Airlouvers have to fit... you order them *that way*

Fill any wall opening with one or more weather-tight units tailored for the need . . . *without premium cost*

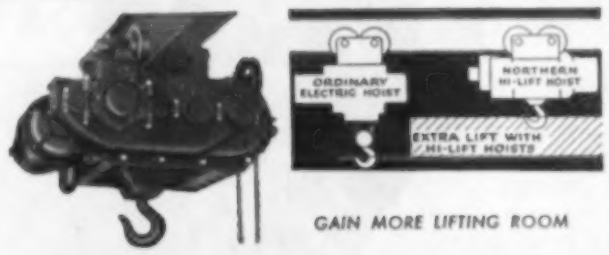
The wide size variation available in Airlouvers — the unique Swartwout louver system — virtually gives you custom-made equipment at economical standard costs. Odd-size units make it easy to fill any size opening with multiples of uniform sections.

Strong formed channel frame houses overlapping blades that assure weather-tightness. Adjustable style Airlouver features positive closing and quick change of blade position. Made in fixed-blade style also. Write for Bulletin ALO-B.

18511 Euclid Avenue, Cleveland 12, Ohio
The Swartwout Co.
Roof Ventilators and Ventilating Louvers
POWER PLANT EQUIPMENT • PROCESS INDUSTRY CONTROLS

If you write maker identify as IEN - 3238

the heavy-duty hoist for low headroom service



GAIN MORE LIFTING ROOM

NORTHERN HI-LIFT HEAVY-DUTY ELECTRIC HOISTS

Heavy load capacity combined with high hook lift—unique in heavy-duty hoists—is the major outstanding feature in NORTHERN HI-LIFT HOISTS, providing for more efficient use of work and storage areas. Capacities: up to 15 tons, standard. Cab control if desired.

Write for Bulletin H-110-163

NORTHERN ENGINEERING WORKS, 2615 Atwater St., Detroit 7, Mich.

NORTHERN CRANES AND HOISTS

If you write maker identify as IEN - 3239

The NEW M·S·A FACEGARD

. . . gives workers the comfort they want —the protection they need

Workers everywhere are giving the new M.S.A. Facegard their vote for the best in comfort and protection against flying objects, abrasives, dusts, chemical splash. And there are good reasons why . . .

. . . Wide-open spaces between face and visor eliminate the annoying, time-consuming practice of coming up for air. . . . The attractive green half-cap, fiber glass reinforced, is unusually light . . . A foam rubber sweatband cushions headgear against worker's head for comfort . . . Elastic headband, adjustable to all sizes, frees wearer of pressure-points . . . All visors are 12 inches wide with a choice of length, thickness, clear or medium green shade . . . Permits wearing of the popular Dustfoe #55 Respirator when needed. *Write for details today.*

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
201 North Braddock Avenue
Pittsburgh 8, Pa.
76 Branch Offices in the United States

If you write maker identify as IEN - 3240

Chicago MOUNTED Wheels

...now even better with **79E BOND**

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & Mfg. Co.
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as **IEN - 3241**

AGASTAT

Compact . . . Dust-Proof

TIME DELAY RELAYS

solenoid actuated—pneumatically timed

Introduces time delays into a-c or d-c circuits. Easily adjusted to provide delays ranging from 0.1 second to five or more minutes.

The AGASTAT is small, light, and operates in any position. Dust-proof timing chamber assures long operating life with a minimum of maintenance.

Write for Bulletin. Dept. A1-32,

AGA

Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey

If you write maker identify as **IEN - 3242**

JOY WL-80 "UNITAIR"

the Compressor of 1000 uses

81 to 640 CFM

★ A size for *every* standard motor rating
★ Air cooled . . . Two stage
★ Force-feed lubrication
★ Small floor-space requirements

Write for this FREE HELP!

New 16-page Bulletin A-56—has complete details and a Selector Chart to help you choose the right compressor for your needs.

Consult a Joy Engineer W&D 13087

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write maker identify as **IEN - 3243**

When heavy, unwieldy weldments like these diesel crank cases can be quickly swung into any position so that every weld is downhand — that's efficient welding.

Welders spend more time welding—do better welding at lower cost when they work with C-F Positioners because these hand and/or power operated machines reduce positioning time to a minimum. Investigate the cost saving advantages of C-F Positioners. They pay their way in any company.

Write for Bulletin WP 26—an illustrated circular detailing the Specific Advantages of C-F Positioners.

CULLEN-FRIESTEDT CO.
1310 S. Kilbourn Chicago 23, Ill.

If you write maker identify as **IEN - 3244**

WEIGHING . . Twenty gram balance for fast, accurate use in laboratory

Source: FISHER SCIENTIFIC CO.
717 Forbes St., Dept. IEN, Pittsburgh 19, Pa.

Within 0.002 mg.

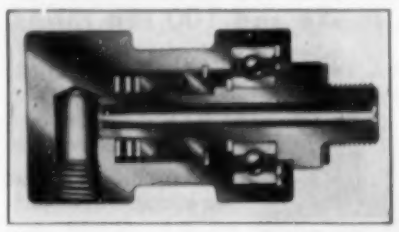
Weights are removed by turning knobs on the front of this new Micro-Gram-atic Balance after a sample has been placed on the pan. The operator removes the weights down to 0.01 gram of the weight of the sample. As each is removed, it is registered on a counter on the panel. The next third and fourth decimal places are read on a ground glass screen. The fifth and sixth decimal places are obtained by turning an optical micrometer that forms part of the assembly. Oscillations are stopped by an air damper.

A metal front shield protects the balance from the operator's body heat. Finish is in white enamel for heat reflection. A built-in lamp in the optical micrometer operates on 110 or 220-volt ac. The assembly is complete with built-in chromium nickel alloy weights, a magnifier light shield and a spare lamp. List price is $1,150.

If you write maker identify as **IEN - 3245**

PIPE FITTING . . Rotary joint to make stationary-rotating connection

Source: BARCO MFG. CO.
500 Hough St., Dept. IEN, Barrington, Ill.



Carries air or liquid

The rotating spindle in this new ¼-in. Type-NV rotary joint is mounted on a factory lubricated sealed ball bearing in the stationary bronze housing. The spindle is spring loaded and sealed with V-rings. The spindle end threads into the hub of a rotating machine member and is sealed by drawing it up tight against a washer provided for this purpose. Connection is made into the ¼-in. threaded inlet in the joint housing by a pipe or fitting to a flexible hose, the latter providing free floating action.

Operating temperature is to 180 deg. F. Pressure rating is to 300 lb., when handling air, 1,500 lb. hydraulic. Speed is maximum at 2,000 rpm. for normal applications with lower speeds for high pressure and temperature conditions. Applications include connection to clutches, power transmission drive units, chucks, spindles, grinding wheels.

If you write maker identify as **IEN - 3246**

Gaskets, filters, backing for abrasives, shoe linings or stiffeners are representative applications forecast for the new non-woven fabric Nylon Texstar. The material was originally developed by Star Woolen Co., Dept. IEN, Cohoes, N. Y. to replace interlinings and interfacing in clothing. It can be made soft or stiff, light or heavy. It is available in a standard 38-inch width.

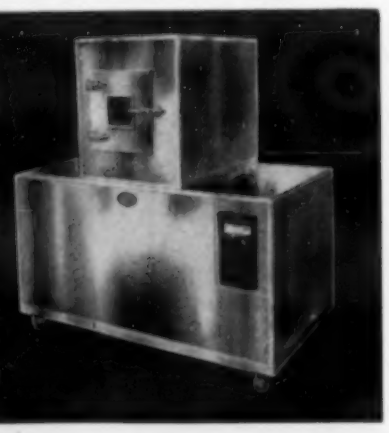
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3247**

WEBBER
TRADE MARK REGISTERED

TEST CHAMBER

WITH HIGH-TEMPERATURE, LOW-TEMPERATURE AND HUMIDITY



★ This Webber test unit, designed for production and experimental testing, has a temperature range from +250°F., to −100°F. The pull-down to −100°F., is achieved in 45 minutes, and can be cycled from −100°F., to +250°F., in 30 minutes. 95% relative humidity is provided at temperatures between 75°F., and 95°F. Vacuum equipment can be added to simulate high altitudes. The test chamber, provided with a moisture-proof light for illumination, is 4½ cubic feet, 20 inches high, 20 inches wide, 20 inches deep. High and low temperatures are governed by a temperature controller with scale range from −200°F., to +400°F., with a 3 degree control point differential, 1½ degrees plus and minus. The humidity is regulated by a wet and dry bulb controller. Unit size is 60" long, 45" wide, 74" high. Apertures in left side of cabinet provide for electrical cables to energize equipment being tested. Webber offers a complete line of test units for various applications.

Write for more complete information

INDUSTRIAL FREEZER DIVISION
WEBBER MANUFACTURING COMPANY, INC
(Formerly Webber Appliance Co., Inc.)
3746 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as **IEN - 3248**

MINNESOTA

the O-ring with the FORMULA for strength, accuracy and uniformity

INJECTION MOLDED Minnesota O-rings meet specific requirements for hydraulic seals with close tolerances and without flash or trim. They function in air, gas or hydraulic systems including cylinders, hydraulic valves, water pumps, hoisting mechanisms, hydraulic brakes, bottling machines and engines. ***Write for the O-Ring Bulletin.***

Also manufacturers of U and V seals . . . grommets . . . washers . . . and small parts made of rubber and synthetics including silicone, thickol and saran.

MINNESOTA RUBBER & GASKET COMPANY
3630 WOODDALE AVENUE • MINNEAPOLIS 16, MINN.

If you write maker identify as **IEN - 3249**

Now...colorful one-piece *glass* housings

At last—one-piece housings with all the *plus qualities* of glass. Lasting brilliance in unlimited colors or color combinations. Intricate shapes and exact tolerances. And glass is strong . . . resists heat . . . never warps, stains or deteriorates. Cleans easily!

There is no real substitute for glass — yet, glass costs less than so-called substitute materials.

Let Lancaster's design engineers help you capitalize on the special characteristics of glass for your product. Lancaster has the know-how and equipment to handle your most exact glass part specifications. Today, send your specifications to . . .

THE Lancaster Lens Co.
Lancaster, Ohio
INDUSTRIAL GLASS MADE TO YOUR SPECIFICATIONS

If you write maker identify as **IEN - 3250**

Gravely Tractor With Sickle Mower Attachment

Grounds upkeep and maintenance problems are solved quickly, easily and BETTER when you use the powerful 5-HP Gravely Tractor! . . . 21 tools for year-round use with seasonally selected attachments, quick change from job to job in minutes! Only the Gravely does so many jobs so well!

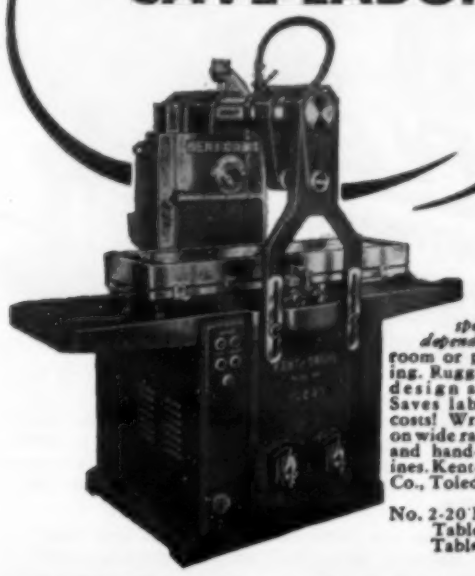
All-Gear Drive, Power Reverse. Institutions-tested for 32 years.

Ask for your copy of FREE Gravely catalog, "Power vs. Drudgery." See how you can do MORE jobs faster and better

GRAVELY TRACTORS, INC.
BOX 340 DUNBAR, W. VA.

If you write maker identify as IEN - 3251

MILL IT *faster..* SAVE LABOR!



Kent-Owens advanced features mean *speed, accuracy* and *dependability*...in tool room or production milling. Rugged ... simple in design and operation. Saves labor ... reduces costs! Write for bulletins on wide range of hydraulic and hand-operated machines. Kent-Owens Machine Co., Toledo, Ohio.

No. 2-20 Milling Machine
Table, 42" x 12"
Table travel, 20"

KENT-OWENS
Milling Machines

If you write maker identify as IEN - 3252

*first** IN INTERIOR FIRE PROTECTION

ALLENCO

OFFERS

PROMPT DELIVERY
WIDE SELECTION
TOP QUALITY

FIRE EXTINGUISHERS and SUPPLIES

Approvd for fires of Class A, A1, B, B1, C, C1—soda-acid, foam, V/L, pump, gas—several sizes and finishes, also cabinets

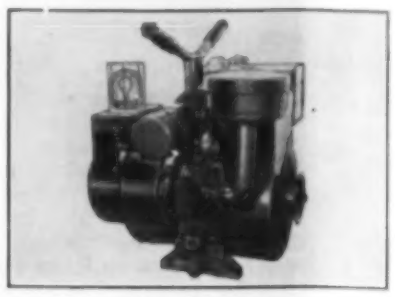
*Voted 1st by engineers, architects, contractors, distributors; most widely used. Also complete line of hose fittings for all purposes. Write for catalog or consulting service.

Established 1887
W. D. ALLEN Manufacturing Co.
CHICAGO 6 • NEW YORK 7

If you write maker identify as IEN - 3254

GENERATOR . . Engine driven dc. 165 pounds, rates 2 kw. on 115 volts

Source: UNIVERSAL MOTOR CO.
511 Universal Drive, Dept. IEN, Oshkosh, Wis.



Bulletin DPE

Model 2050-M is a new unit assembly of gasoline engine and dc. generator. It has been designed for flood lighting duty and to operate universal portable tools. The engine is a single cylinder air cooled design rating 4 hp. and operating at 2,800 rpm. It is provided from a 4-qt. gasoline tank. The close coupled generator has a control panel that contains four twist lock receptacles. A pilot light supplies operating illumination.

If you write maker identify as IEN - 3255

WELDING . . Coated arc electrode for hand application to 15 in. per min.

Source: LINCOLN ELECTRIC CO.
Box 3035-A, Dept. IEN, Cleveland 17, Ohio

Technical data in Bulletin 481

Jetweld is a new arc electrode for hand use. It employs powdered metal in its coating for fast welding action combined with high standards of weld quality, appearance and ease of operation. It is recommended for use in flat or near flat positions with ac. or dc. input. It meets the physical requirements of Class E-7016.

Tensile strength, as welded, is to 93,000 lb. per square inch. Yield point is to 79,000 pounds. Elongation in 2 in. is 15 to 22 per cent. Charpy keyhole impact value at room temperature is 28 foot pounds. It is 20 ft. lb. at minus 70 deg. F.

Bead appearance is smooth. Slag curls off as it cools so the weld is essentially self-cleaning. The acton is nearly spatter free. The arc is stable and resistant to blowing. The electrode is applied with the coating touching the work in a "drag" action. Three sizes are $\frac{5}{32}$ to ¼ inch.

If you write maker identify as IEN - 3256

INSULATING . . Shock absorber to protect pressure gage or governor

Source: J. A. CAMPBELL COMPANY
645 E. Wardlow Road, Dept. IEN, Long Beach 7, Calif.

Carried in stock

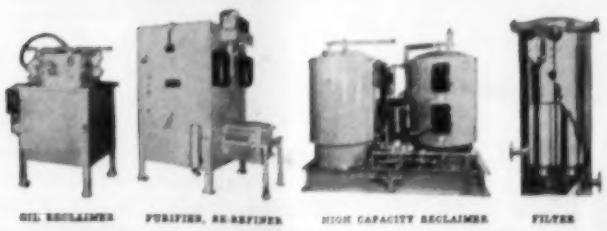
Micro-Bean is a recently improved pulsation dampener for installation on pipe lines leading to gages and governors. It is made with a brass body for 3,000-lb. operating pressure, of steel for 6,000 lb., or stainless steel for 10,000 pounds. It is equipped with a stainless steel filter and with a needle valve for throttling adjustment. Threaded connections are ¼ or ½ inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3257

HILCO LUBRICATING AND INDUSTRIAL OIL MAINTENANCE EQUIPMENT

Saves You MONEY, OIL and MACHINERY



OIL RECLAIMER — PURIFIER, RE-REFINER — HIGH CAPACITY RECLAIMER — FILTER

A COMPLETE LINE OF EQUIPMENT FOR RECLAIMING, FILTERING, PURIFYING AND RE-REFINING OIL.

★ Hilco units are available for continuous or batch operation. You can keep your lubricating and industrial oils clean and recover large quantities of oil at low cost.

Whenever Oil is used it becomes contaminated—must be discarded or conditioned for further use.

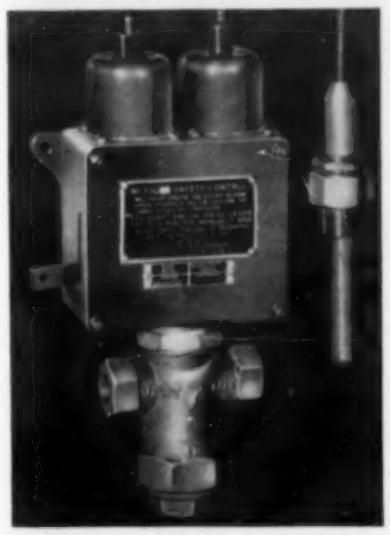
There is a HILCO to do This Job for You
Cleans Oil, Reduces Down Time, Increases Production!

★ Tell Us About Equipment You Are Operating and We Will Forward FREE Literature and Recommendations.

OIL PURIFIER DIVISION
THE HILLIARD CORPORATION
35 W. 4th ST. • ELMIRA, N. Y.
IN CANADA — Upton - Bradeen - James, Ltd.
990 Bay St., Toronto, 3464 Park Ave., Montreal

If you write maker identify as IEN - 3258

SYLPHON SAFETY CONTROL PREVENTS ENGINE DAMAGE



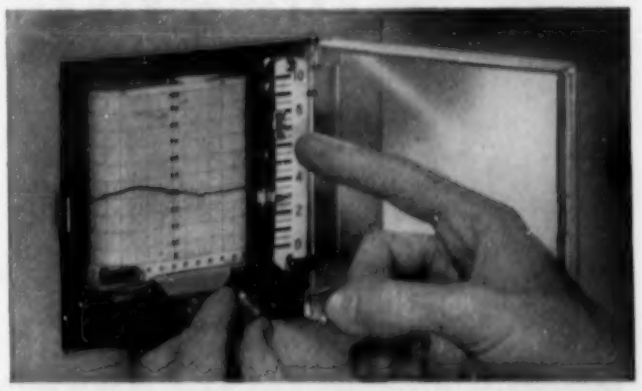
The No. 530 Sylphon Engine Safety Control automatically stops the engine—if cooling water temperature goes above, or lube oil pressure goes below safe limits. Will shutdown small diesel engines direct and sound alarm, or serve as pilot valve to stop gas engines. Simply constructed, rugged, dependable. Self-operating. Saves trouble, time and money. Write for information. Ask for Bulletin EN-817.

Robertshaw-Fulton
CONTROLS COMPANY

FULTON SYLPHON DIVISION • KNOXVILLE 1, TENN.

If you write maker identify as IEN - 3259

WHAT'S NEW AT BRISTOL . . .



Instrument men call Bristol's new METAGRAPHIC Recorder
"...the biggest little instrument"

• Designed with the operator foremost in mind, the air-operated "human-engineered" Bristol METAGRAPHICS are easy to read, with numerals and calibrations sharply defined for maximum visibility.

The METAGRAPHIC's continuous valve-position indication, which is separate from the set-point indication, gives continuous data on control valve position and level of process operation. No switching is necessary to get reading.

Write us today for the whole story on the "human-engineered" METAGRAPHICS. The Bristol Company, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL Points the way in human-engineered instrumentation

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN - 3260

Lightweight-Economical

IT'S THE REVOLVATOR® UPLIFTER ELEVATOR

Adaptable for shop use or warehouse handling and ideal for shipping and receiving—the new electric Uplifter is the real buy today in materials handling. In two capacities, 1000 - 2000 pounds, platform sizes 24 x 24 and 30 x 30, lifts of 62 and 65 inches on standard models — the Revolvator Uplifter can be had powered by a variety of electric circuits ranging from an automobile battery to 220 volt currents.

Priced under all competition, the Uplifter includes all the safety and convenience features that have made Revolvator portable elevators a standard in industry. Get full information today on this new, easy operating inexpensive portable elevator. Remember, too — we build Revolvator Portable elevators to your particular needs.

Write or phone
REVOLVATOR CO.
8759 TONNELE AVENUE, NORTH BERGEN, N. J. • UNion 3-8120

If you write maker identify as IEN - 3261

SHELDON

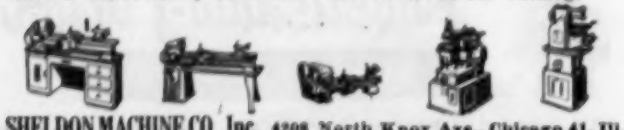
CHICAGO U. S. A.

More will be *profit* with a SHELDON

It actually costs less to do turning jobs on a Sheldon Precision Lathe. Machine-tool investment is cut to a fraction. Power cost is materially reduced. Less experienced operators can operate Sheldons safely and efficiently. Even cost-loadings for plant-floor space, heat and light are lower because two Sheldons can often operate in the space occupied by one large lathe.

On most "everyday" jobs a Sheldon will actually turn out more pieces per hour too. With double V-belts to the spindle Sheldon lathes deliver enough power to take heavy cuts in direct drive, at high speeds. Sheldon's "Zero Precision" Taper Roller Bearings permit work to the closest tolerances. Seldom are such extremely accurate bearings used in moderate priced lathes.

You will actually keep more as profit if you use Sheldon Lathes. Write for Catalog.



SHELDON MACHINE CO., Inc. 4208 North Knox Ave., Chicago 41, Ill.

If you write maker identify as IEN - 3262

FOR YOU: THE FACTS ABOUT CARBON IN MACHINE DESIGN

(Free on request. Mail coupon.)

Morganite Brochure Contains Many Facts Every Design Engineer Should Know About

CARBON

Many design engineers have cracked some mighty tough problems through the use of carbon parts in machine design. Years of study have revealed properties inherent in carbon which, when applied to industrial machines, simplify design, reduce maintenance costs, and add life to vital equipment.

Carbon will withstand high temperatures and thermal shock. It resists most acids, solvents, or alkalis. It will not gum up or warp under most conditions. And it "oils" itself.

Write Today For

Morganite Design Data Reference—describes advantages, lists chemical and physical properties, gives hints on design. No obligation.

REGISTERED TRADE MARK

Morganite INCORPORATED

3312 48th Avenue, Long Island City 1, N. Y.

Gentlemen:
Please send me, without obligation, a copy of Morganite's new brochure, DESIGN DATA REFERENCE.

Name_____
Title_____
Company_____
Street_____
City_____ State_____

If you write maker identify as IEN - 3264

STRAPPING . . Breaking tool to remove steel strapping quickly

Source: GUSTAVE LIDSEEN INCORPORATED
825 S. Central Ave., Dept. IEN, Chicago 44, Ill.

About $5

Buster Strapbreaker is a new tool with a slotted head that slides into place on steel strapping surrounding a shipping container. Pulling or pushing the tool handle results in cutting the strap cleanly without danger of the strap flying up to cut the operator. The tool is made of forged steel. It weighs about 2¾ lb. and is fitted with a plastic grip. Overall length is 19 inches. Capacity is for straps to 2 in. in width.

If you write maker identify as IEN - 3265

GAGE . . Granite straight edge to check machine beds, flat surfaces

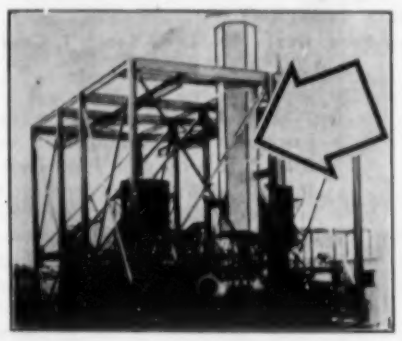
Source: COLLINS MICROFLAT CO.
2326 E. 8th St., Dept. IEN, Los Angeles 21, Calif.

Will not burr

Accuracy is within 0.0002 in. per ft. for this new line of black granite straight edges. The line has been added to the 0.00005-in. precision units, previously described IEN-9966-53. It is intended for use in plants where the higher accuracy is not required. It has the same advantages as the highly precise design in that it is non-warping, non-deflecting, easily cleaned, smooth, inert to temperature changes, rigid and moisture repellent. The ends are tapered and fitted with leather grips.

If you write maker identify as IEN - 3266

Perhaps you need a stack that will handle hydrofluoric acid fumes, such as the one shown in the illustration, or a tank, crock, duct, hood made of corrosion resistant reinforced plastic. If you do, you may want to tell Schori Process Div., 8-11 43rd Road, Dept. IEN, Long Island City 1, N. Y. This company is prepared to construct most anything you wish from its material Iolyte, a Fiberglas reinforced polyester laminate.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3267

CHAINVEOR

NEW LOW COST OVERHEAD CONVEYOR *of Revolutionary Design for loads up to 60 lbs. per foot.*

Typical Industrial Installation—Illustrates flexibility and simplicity of installation. System is 190 feet long with equivalent of 52 vertical and horizontal 45-degree curves. Total weight carried, 5800 lbs. Driven by ⅓ HP motor at speed of 10 to 30 F.P.M.

We can't adequately describe the advantages of CHAINVEYOR in limited space. Completely enclosed — Simplicity of design — Reduced bulk, weight — 15" radius curves — Full ball bearing chain — Curves, chain scientifically heat-treated to "file hardness" triples life— Simple rugged power drive — So easily installed that most buyers do it themselves for a total cost that is most interesting.

Nationally Distributed by MATHEWS CONVEYER COMPANY Ellwood City, Pa. with offices in all principal cities.

New catalog gives complete information • Write for it!

United States Spring & Bumper Co.
4931 Alcoa, Box 2475 Terminal Annex
Los Angeles 58, California

If you write maker identify as IEN - 3268

ANOTHER **IBH*** FIRST

*"IN-BETWEEN-HANDLING" Short distance hydraulic manipulation of materials too heavy for manual handling yet not requiring high priced power-driven equipment.

BIG JOE®

TRIPLES THE ACTION!

EASIER, FASTER UNLOADING

The first successful TRIPLE ACTION hydraulic pump is now standard on *all* "BIG JOE" foot operated lift trucks. The platform or forks can now be raised with ease — empty or with loads up to 200 lbs. — at a rate of 3½" per stroke. *The operator is saved 21 strokes per 56" lift.*

There are more than 40 manual and battery operated "BIG JOE" units designed for IBH*.

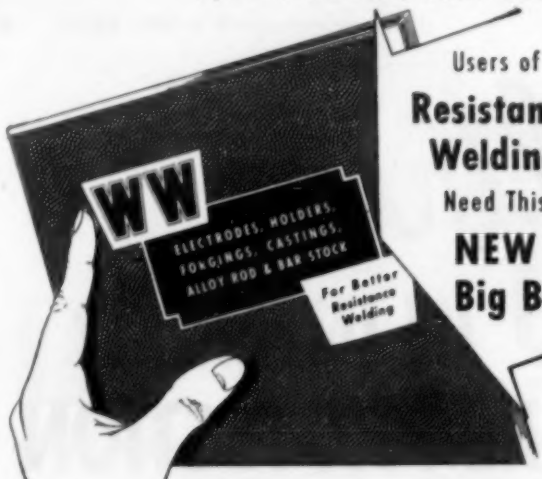
Write for our booklet on "IBH"

"HYDRAULIC HANDLING FOR EVERY DEPARTMENT"

BIG JOE Manufacturing Company
900-02 Jackson Blvd., Chicago 7, Ill.

©1954 Big Joe Mfg. Co.

If you write maker identify as IEN - 3269



Users of **Resistance Welding** Need This **NEW Big Book**

Here, at last, is a catalog designed for a busy man to use—good, clear illustrations with contours and dimensions plainly shown—well-organized listings with prices right alongside the specifications.

Nearly 700 resistance welding electrodes are listed for almost any welding job. The catalog also lists water-cooled holders of every style and size, seam welding wheels, alloy rod and bar stock.

If you do resistance welding, you need this book. Write for your free copy today.

42802D

WW ALLOYS, INC.
Division of Fansteel Metallurgical Corporation
11644 CLOVERDALE AVENUE, DETROIT 4, MICHIGAN

If you write maker identify as IEN - 3270

IT'S LIKED MORE BECAUSE IT DOES MORE

LESTO

Electric

HAND SAW

Cuts inside holes without drilling a starting hole.

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SCROLL
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Extremely fast for soft and hard wood, soft metal, bone, plastics, hard rubber, cement sheet, pressed wood, etc.

Cuts 2" Wood Beams

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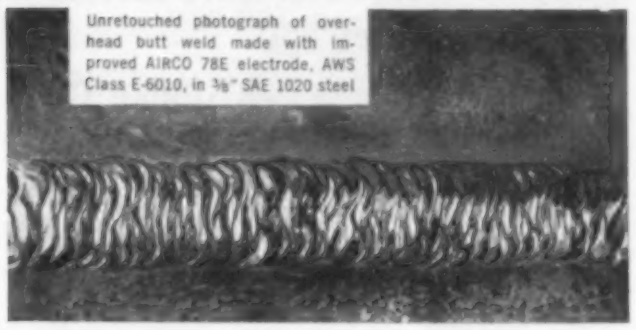


Unretouched photograph of overhead butt weld made with improved AIRCO 78E electrode, AWS Class E-6010, in ⅜" SAE 1020 steel

Make mild steel welds like this in any position with the

A smooth-looking weld, yes, but appearance is only part of the story with the improved AIRCO 78E electrode for the all-position DC welding of mild steel. The 78E's improved flux coat gives you higher current capacity and faster burn-off rate . . . without "fingernailing" or slag and gas inclusions in the weld metal. Result: in all positions, weld quality is as good as its smooth outward appearance. Write for your copy of "Pocket Guide to Airco Electrodes."

improved AIRCO® 78E

AIR REDUCTION
60 E. 42nd Street
New York 17, N. Y.

Air Reduction Sales Co.
Air Reduction Magnolia Co.
Air Reduction Pacific Co.
Represented internationally by
Airco Company International
Divisions of Air Reduction Co., Inc.

If you write maker identify as IEN - 3272

WESTON *all-metal* THERMOMETERS

Although WESTON provides sensing elements of various forms for special applications, the element in all standard WESTON Industrial Thermometers is a *multiple helix* as illustrated above. Why the more costly *multiple*, instead of the single, helix? *Just one reason.* WESTON's twenty years' experience producing bi-metal thermometers for industry has furnished convincing proof that the shorter, non-sagging *multiple* helix provides better accuracy, over longer periods. And while it provides other advantages, the one thing most thermometer buyers demand is long-term dependability. You get it, in extra measure, in WESTON Thermometers with *multiple* helix. WESTON Electrical Instrument Corp., 614 Frelinghuysen Avenue, Newark 5, N. J.

WESTON *Thermometers*

If you write maker identify as IEN - 3274

HEATING . . Electric salt bath heats stainless steel for extruding

Source: **AJAX ELECTRIC CO.**
Delaware & Frankfort, Dept. IEN, Philadelphia 23, Pa.

The work is suspended

Illustrated are two new salt bath furnaces that form an integral part of the Ugine-Sejournet hot extrusion process to convert stainless steel billets into extruded tubing or solid extruded shapes. One of the furnaces rates 900 kw. The other rates 1,400 kw. The larger unit measures about 11 ft. in mean diameter by 2 ft. in hearth width by 42 in. in depth. The smaller one measures 9 ft. by the same width and depth as the larger unit. Both operate at 2,300 deg. F.

Stainless steel billets are carried into each furnace, immersed in the molten salt and carried around through it for discharge to the extruding operation. The billets measure 5¼ and 7 in. in diameter. They range in length from 6 to 24 inches. A 5¼-in. diameter piece can be heated to extruding temperature in about 25 minutes.

Scaling, oxidation and decarburization are avoided by immersion in the salt and by the protective film of salt that comes away from the bath when the billet is removed. Fumes are exhausted from both furnaces through gun-like ducts which can be seen extending to the right.

If you write maker identify as IEN - 3275

VENTILATING . . Exhaust unit discharges bad air, fumes through roof

Source: **C. L. AMMERMAN COMPANY**
110 N. 2nd St., Dept. 3, Minneapolis 1, Minn.

Bulletin No. 151

Motor driven centrifugal blower, with forward curved blades, operates inside a scroll housing in this new AirXpeler power roof ventilator. Intake to the blower housing is through a venturi connection on a square curb base. Outlet is downward and out radially from beneath the spun steel hood in which the blower and the motor are enclosed. Finish is in baked gray enamel to protect against exposure.

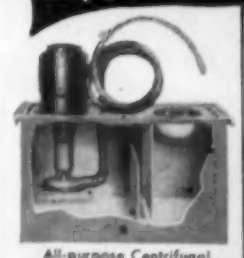
The motor is a standard unit, ball bearing design, and is located above the blower where it is out of the air stream. Construction includes Underwriter's Approved safety disconnect switches. Gravity or motor operated louver type dampers can be supplied. They install in the curb on special order.

Base dimensions range from 17 to 29 inches. Motor rating is 1/20 to 5 hp. Free air delivery rates 184 to 5,430 cfm. A 2-hp. and a 5-hp. unit rate 3,510 and 3,975 cfm. against 1¼ in. s.p.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3276

See how GRAYMILLS Coolant Pumps can help you
• convert to wet cutting or
• replace worn out pumps



All-purpose Centrifugal Pump Unit No. H-2-3308A for 90% of machine tool applications

Gear Pump Unit No. SG1-4-25A Ideal for single spindle drill presses and small lathes

in a matter of minutes for increased production—improved quality — and longer tool life with your present machine tools.

If you need a larger volume of coolant, cutting oils, water, solvents, etc., at low pressures, the new improved Graymills Centrifugal coolant pumps are your answer. If you need higher pressures, for heavier liquids, a Graymills Gear type pumping unit will deliver from 1 to 3 GPM with pressures up to 100 PSI. Both types will give longer trouble-free service, efficient operation at a minimum of cost. Standard models in 1/25, ⅙, ¼ and ½ H.P. Various tank sizes and fittings.

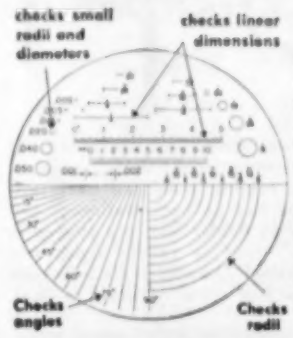
All standard models stocked by leading Industrial Supply Distributors for immediate delivery — or write for catalog.

GRAY-MILLS

GRAYMILLS CORPORATION
3759 NORTH LINCOLN AVENUE · CHICAGO 13, ILLINOIS
WEST COAST: 4511 MELROSE AVE. · LOS ANGELES 29

If you write maker identify as IEN - 3277

THE Original BELL & HOWELL
Pocket Comparator



Saves time and money inspecting small dimensions

● Here's *guaranteed* accuracy in checking small dimensions at a price any business can easily afford. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as chamfers, threads and small holes on production parts.

Thousands in use by America's leading precision manufacturers. It's the greatest time-saver since the micrometer!

price only **$36.00** order today

A product of **BELL & HOWELL CO.** Distributed by

See Your National Tool Co. Representative or Local Jobber

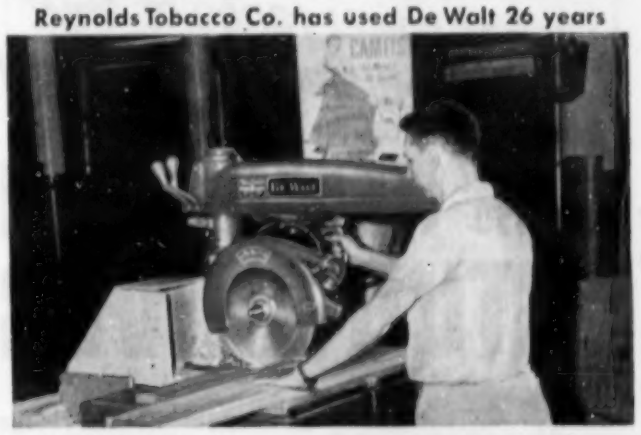
NATIONAL TOOL CO.
11220 Madison Avenue Cleveland 2, Ohio

Write for FREE descriptive folder

If you write maker identify as IEN - 3278

All-Purpose AMF De Walt is best for plant maintenance!

Reynolds Tobacco Co. has used De Walt 26 years



You'll find *one* low-cost AMF DeWalt® will meet *all* your plant maintenance needs—and that includes all types of construction work and boxing and crating.

Just one DeWalt turns out pallets, conveyor bucks, crating, book shelves, ladders and many other products. It's amazingly versatile—cross-cuts, miters, bevels, rips, dadoes, shapes and many others! Tops in speed, accuracy and safety, too.

Send for catalog to DeWalt Inc., Dept. IEN-54-3, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.
DEWALT
POWER SAWS
In Canada: De Walt Canada Ltd., Guelph, Ontario
Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, New York

If you write maker identify as IEN - 3279

New DRY TAMP PERMA*Mix* Floor Patch

Don't stop traffic to repair floors—use Permamix, the new all-temperature DRY TAMP floor patch.

DRY TAMP MEANS SPEED • No sticky mass to dig out of the drum or to handle • Permamix dry pours • sets instantly • feather edges perfectly • no production delays • non-skid surface.

ALL TEMPERATURE • Won't freeze • can be stored or used in *any* temperature • will store indefinitely • a stock room item • will not "set" in drum whether open or covered. Mistakes just can't happen. Tamp in place and traffic rolls.

CUTS MAINTENANCE COSTS on concrete, brick, tile or asphalt floors • no special equipment or skill needed • a one man job • comes in durable 50 lb. net wt. fibre drums • solve your floor patching problems for good.

Write for Details Now!

PERMAMIX CORPORATION
230 N. LaSalle Street • Chicago 1, Illinois

If you write maker identify as IEN - 3280

ANGLE STEEL STOOLS

for
- CAFETERIA
- SHOP
- CLASSROOM

and many other uses

Angle Steel offer a diversified line of stools developed over a period of almost 50 years devoted to the producing of posture perfect seating.

No. 21 - E - 24

No. 24 - E - 28

Numerous models are available to fit any seating need. Wide range of styles, heights, seats and back rests can be had on both stationary and revolving stools. Seats are offered in wood, round or saddle styles and round steel. The adjustable back rests can be had either of wood or steel.

For additional information write for CATALOG No. 300—Sept.—1953

ANGLE STEEL, Inc.
Plainwell, Mich.

If you write maker identify as IEN - 3281

Widest power range of any powder-actuated fastening tool

MODEL 450 REMINGTON STUD DRIVER

Six different 32 caliber charges meet every fastening requirement

Each of the six power loads for the Remington Stud Driver is designed to give the right power for the job — whether it's driving the stud into concrete or steel.

New, longer heel caps on all six cartridges mean a perfect gas seal ...assure arrow-straight driving. Bright colors indicate the right load instantly, no chance for error. You can select the *right* cartridge for each job...quickly and easily.

But exceptional power range is just one of the Remington Stud Driver's many advantages. This self-powered tool sets up to 5 fastening studs per minute...speeds construction jobs and cuts costs. Its light weight—only 5½ pounds—makes handling easy, even in confined places.

Test-proved to be the world's finest and speediest fastening system, the Model 450 Remington Stud Driver is made by the Remington Arms Company, Inc., *America's oldest sporting arms manufacturer.* Send in the coupon below for your free booklet describing the Stud Driver and its many uses.

"If It's Remington—It's Right!"

Remington DU PONT

MAIL THIS COUPON TODAY

Industrial Sales Division, Dept. IEN-3
Remington Arms Company, Inc.
939 Barnum Ave., Bridgeport 2, Connecticut

Please send me my *free* copy of the new booklet showing how I can cut my fastening costs.

Name .....
Position .....
Firm .....
Address .....
City ..... *State* .....

If you write maker identify as IEN - 3283

SIGNALING . . Electronic speaker and recorder repeats recorded message

Source: MICHIGAN ELECTRONICS INC.
854 N. Rockwell St., Dept. IEN, Chicago 22, Ill.

Talks for you

Message Repeater is an electronic assembly, new in the company's line. It combines a recorder and speaker with an endless recording tape and an electronic control that causes it to go into action when an individual walks by. It repeats the message that has been impressed upon the tape by talking into the recorder mechanism. The message can be erased and a new message recorded at any time. Assembly is in a housing about the size of a box camera. List price is $149.50. A tape cartridge adds $10. A microphone adds an additional $10 and an actuating mat adds $14.50 to the list.

If you write maker identify as IEN - 3284

VENTILATING . . Twin fan unit discharges bad air, fumes through roof

Source: VALLEY FAN MFG. CO.
N. Macon St., Dept. IEN, Fort Valley, Ga.

Catalog 60

Two fans are belt connected to a centrally located motor and the assembly is enclosed within a louver equipped steel housing in this new "penthouse" twin fan ventilating unit. The housing measures 118 by 75 by 60 inches. The fans are driven by a 2-hp. single or three-phase motor for a rating of 50,600 cfm. The louvers are connected to close when fans are not in operation and to open when they are started.

If you write maker identify as IEN - 3285

SIGNALING . . Electric alarm indicates accumulation of tramp iron

Source: ERIEZ MFG. CO.
Grove Drive, Dept. IEN, Erie, Pa.

Tells when to clean

Magnalarm is a new electric signaling unit for use with a permanent magnetic separator in a flow line likely to include tramp iron. The circuit includes a light, bell or buzzer, supplied by the user, to sound an alarm when tramp iron has accumulated on the magnetic separating element to a predetermined amount. The signal indicates need for removal of the tramp iron to insure continuing safe operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3286

The New **REED** SERIES S

ADJUSTABLE GUIDE RATCHET THREADERS
with self-starting chip-ejecting dies

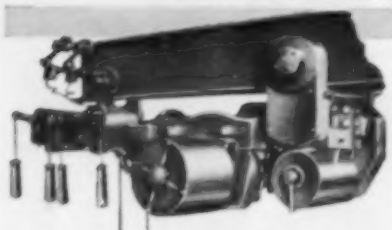
CAPACITIES:
⅛" to 1"
¼" to 1¼"
⅓" to 2"

• *Cuts clean true* threads for tight joints *. . . everytime.*

- Light, compact and long-lasting.
- Simpler, faster and easier to use, especially in close quarters.
- No Lead Screw. Reed chip-ejecting, double-threaded throat dies start without pushing and cut clean threads with minimum effort.

REED MANUFACTURING COMPANY
ERIE · PENNSYLVANIA · U. S. A.

If you write maker identify as IEN - 3287



move it overhead with ELECTROLIFT

Materials will move faster and with less waste motion when you move them over crowded aisles with ElectroLift worm drive hoists. Any ElectroLift will quickly pay for itself in savings in time, power, labor and reduced accidents.

Built for long, profitable and trouble-free service, the ElectroLift hoist is available in a wide variety of models up to 6 tons capacity with optional pushbutton control.

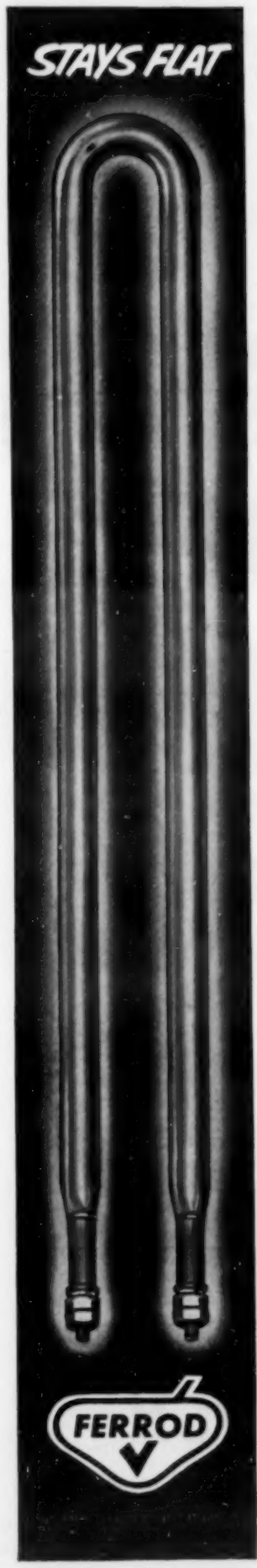
Get all the facts on ElectroLift by contacting your ElectroLift representative listed in your telephone directory.

ElectroLift, Inc.
30 Church St., New York 7, N. Y.

2178

WORM DRIVE ELECTROLIFT HOISTS

If you write maker identify as IEN - 3288



LASTS LONGER!

FERROD'S NEW

HEAVY-DUTY

STRIP HEATERS

Made in *three* over-all widths (from 2⅝" to 5⅝"), these new "U" shape units may be used singly or "nested" and provide the "best bet yet" for dependable electric heating under heavy duty conditions.

•

As in other Ferrod *rod-type* heaters, the nickel-chromium resistor elements are precisely located, insulated with magnesium oxide, then flattened under tremendous pressure—forming a broad, flat heating surface with a reinforcing "spine" up the back.

•

Available with *mild steel* or *Inconel* sheath, these units cover a wide range of applications, the Inconel being particularly corrosion resistant and operating at sheath temperatures up to 1500° F.

•

Heating surface of rod is ⅝" wide, providing fast response in heating, also permitting close control of temperatures when desired.

•

Made in a wide range of sizes and wattages, Ferrod HD Strip Heaters can be safely operated in series on supply voltages of 480 volts.

•

For further details and complete specifications on standard units quickly available, write

FERROD MFG. CO.
606 N. River St.
Batavia, Illinois

Subsidiary Fibre *Corporation*

If you write maker identify as IEN - 3290

AERO-SEAL WORM-DRIVE HOSE CLAMPS WON'T SHAKE LOOSE!

Wherever you have to clamp a hose connection tight . . . or wherever you want to lock two objects of any shape together in an unshakeable bond . . . your best bet is AERO-SEAL.

Threads of steel worm engage deep into slots in stainless steel band — hold tight under extreme vibration in automotive, aircraft and industrial applications. CAN'T SHAKE LOOSE.

Use of Stainless Steel Subject to Government Regulations

One-Hand Installation

Install an Aero-Seal any place you can reach with thumb and one finger. Self-feeding when band engages worm threads. Thumb-grip and screwdriver types.

Re-use Again and Again

When hose is worn you RE-USE the same Aero-Seal again and again. RE-USE Aero-Seals on temporary clamping jobs—they conform to any shape without damaging band.

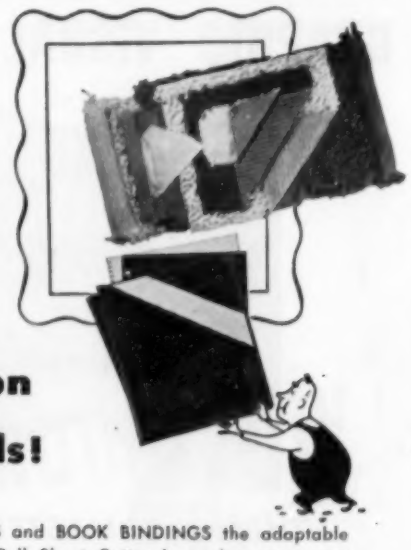
"Aero-Seal" WORM DRIVE HOSE CLAMPS

ANOTHER BREEZE MARK PRODUCT

BREEZE CORPORATIONS, INC.
41 South Sixth St. Newark, N. J.

If you write maker identify as IEN - 3291

YOU, too, can hang up good production records!



With BATH MATS and BOOK BINDINGS the adaptable BECK Automatic Roll Sheet Cutter is an important part of the production picture . . . and it can help you in your cutting problems, too . . . just as it does "rug-cutting" at Katherine Chenilles, Dalton, Ga., and as it helps in the production of Ful-Vue books at Cook's, Inc., Camden, N. J.

Booth #223-225

23rd National Packaging Exposition

Remember: If it comes in rolls, the Beck will cut it, count it and stack it!

Whatever your cutting problem is, Beck can help you. Write

CHARLES BECK MACHINE CORPORATION
412 N. 13th Street Philadelphia 8, Pa.

If you write maker identify as IEN - 3292

IMPROVED QUALITY—LOWER COST

TURNABOUT®

ADJUST • A • FORK

HYDRAULIC LIFT TRUCK

with interchangeable forks

Improved design . . . mass production techniques, give you a quality product, **properly priced.** Proven superior performance . . . extra strength . . . highly maneuverable . . . easy operation. Resinoid type casters and aluminum leader wheels at no extra cost.

Easily interchangeable forks available in five standard lengths. Adjustable on truck frame to provide 25" or 27" width.

Unconditionally guaranteed for one year Write for descriptive bulletin

RACK HYDRAULIC EQUIPMENT CORPORATION
CONNELLSVILLE, PENNSYLVANIA
AGENTS IN PRINCIPAL CITIES UNITED STATES CANADA EUROPE

If you write maker identify as IEN - 3293

DUST COLLECTING . . Fabric tubes, kept clean by reverse flow air jets

Source: AMERICAN AIR FILTER CO.
215 Central Ave., Dept. IEN, Louisville 8, Ky.

Bulletin 279

Dust laden air enters a connection in the side of the plenum chamber at the top of this new AmerJet dust collector. Air and dust move downward through venturi outlets in the bottom of the chamber to enter fabric tubes that extend downward to a dust hopper at the bottom. Air passes radially outward through the fabric to leave the housing at a side connection about centrally located between the top and bottom. Dust is stopped on the inner surfaces of the tubes from where it drops down inside the tubes to the hopper at the bottom.

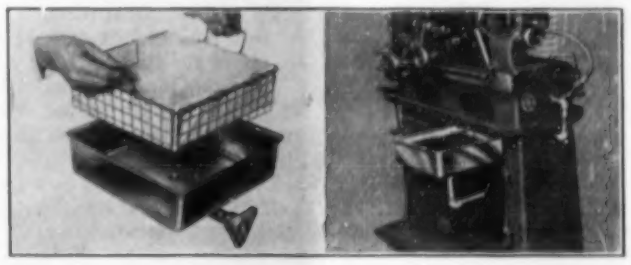
Dust that does not drop off the tube surfaces is removed by reverse air jets from rings mounted in a frame surrounding the tubes. The jets are supplied with air through retractible rubber tubes connecting to an inlet manifold for a high pressure blower at the bottom of the assembly. The jet frame is moved continuously up and down the tube lengths by a chain drive that connects it to a motor mounted on the housing. The frame is connected to the chain by links so the chain and motor do not have to reverse direction to change from upward to downward frame action.

Basic size employ 8 tubes in a housing that measures 53 by 59 inches. These tubes can be 6, 9, 12 or 15 ft. in length. The 6-ft., 8-tube assembly has 120 sq. ft. of filter area. The 15-ft. 8-tube unit rates 300 square feet. Additional sections can be added to meet required dust collecting capacity. Overall height, with 6-ft. tubes, is 173 inches.

If you write maker identify as IEN - 3294

FILTERING . . Basket and receiver take solids from coolant at a machine

Source: INDUSTRIAL FILTRATION CO.
Dept. IEN, Lebanon, Ind.



Specifications and prices upon request

Woven wire basket holding a tray made of filter paper fits into a rectangular receiver to make up this new Delpark Junior coolant filter. The unit has been designed for use on machines employing a comparatively small flow of coolant which is directed into the tray. The liquid moves through the filter paper for return to the machine. Solid matter is retained until it has accumulated to a point where it impedes flow. At this point, the tray and solids are removed and a new tray is put in position as shown to the left in the illustration.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3295

FREE!

. . . Write today FOR THIS HANDY FLEXIBLE SHAFTING TORQUE CALCULATOR

STOW

Gives you the information you need simply, quickly. Eliminates lengthy calculation. And, just as surely, STOW flexible shafting is the right answer for any problem of transmitting power through a curved path, around obstacles, or from one level to another.

Write today, on your company letterhead, for your FREE, handy flexible shafting torque calculator. And remember STOW—first in flexible shafting since 1875.

STOW MANUFACTURING CO.
25 Shear St. Binghamton, N. Y.

If you write maker identify as IEN - 3296

Control Costs! Print the Weight with New TOLEDOS

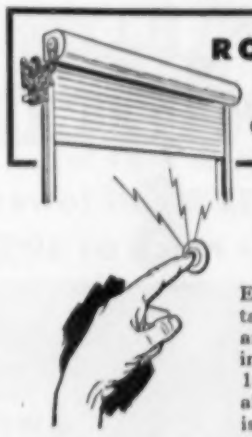
New Toledo Printweigh Scales meet your needs today for *closer cost control!* Stop human errors in reading, remembering, recording . . . provide accurately printed weights with split-second speed . . . *accurately* recorded!

Printweighs are available for dial type scales in the great new line of Industrial Toledos! *44 new features* include . . . new clean-line design . . . double-pendulum mechanism in one-piece sector . . . lifetime fulcrum. Send for new condensed catalog No. 2001. Toledo Scale Co., Toledo 1, Ohio.

TOLEDO.
Headquarters for Scales

If you write maker identify as IEN - 3297

ROBOT OPERATORS ...via Graybar



ELECTRONICALLY OPEN, CLOSE, AND LOCK DOORS AND GATES

Easy to install, operate and maintain, ROBOT Automatic Operators are available for doors, gates, awnings, oven doors, partitions . . . 1000 different uses where a dependable automatic electric power unit is needed to motivate either a reversing travel cycle or an intermittent cycle in a single direction. ROBOT manual and electronically controlled units meet the most rigid safety requirements . . . friction drive prevents damage to any person or object obstructing door operation. Write to Graybar, today, for free illustrated ROBOT Bulletin.

In addition, Graybar distributes everything electrical for wiring, lighting, power, and ventilation. Make it a point to order all your electrical needs through this single, convenient source — you'll simplify your purchasing problems and assure prompt, on-schedule deliveries. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, New York 17, N. Y.* 413-123

Call Graybar *first* for . . . Everything Electrical — Graybar Electric Company

If you write maker identify as IEN - 3298

NOT THIS... BUT THIS

Now . . . for a good shower

—deep freeze!

—scalding hot!

BANISH "BOOBY TRAP" SHOWERS

Use POWERS THERMOSTATIC Water Mixers

Real comfort and safety. No waste of time or hot and cold water.

POWERS THERMOSTATIC WATER MIXERS

—eliminate shower accidents

They are completely automatic, hold shower temperature wherever you want it regardless of **pressure** or **temperature** changes in water supply lines. Failure of cold water instantly shuts off the shower.

Tests prove Powers is safest shower regulator made for factories, schools, hospitals, hotels and clubs. Thousands now in use.

Used for Many Industrial Processes. Users report control within ½° F. Temperature Ranges: 65-115° F., 60-125° F., 75-175° F. Write for Bulletin 365. (b13)

THE POWERS REGULATOR CO.
Skokie, Ill. • Offices in Over 50 Cities • Est. 1891

If you write maker identify as IEN - 3299

DON'T BABY THIS SCHRADER BLOW GUN!

Yes, this drop-forged, stainless steel **Schrader Blow Gun** was designed to take the toughest treatment you can give it! Durability? We dropped it out of a tenth-story window . . . ran over it with a six-ton truck—and it still worked perfectly. Combine this ruggedness with its handy hang-up hook, countersunk nose and shielded operating button and you have a blow gun that will give you many years of fine service.

The complete Schrader line includes dozens of types and styles of blow guns, as well as cylinders, valves and all accessories. Get full details. Write today.

A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-36, Brooklyn 38, N. Y.

If you write maker identify as IEN - 3300

B.F.Goodrich

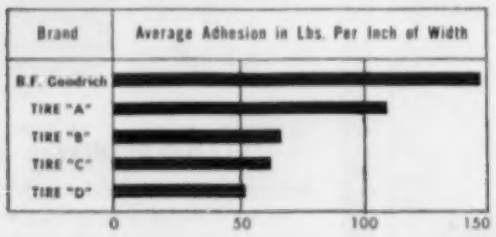
FREE TW TIRE AND WHEEL ANALYSIS can lower over-all tire costs as much as 50%

Savings of as much as 50% on industrial tire costs have been reported by users across the country through the use of the B. F. Goodrich Tire and Wheel Analysis Plan! Tire maintenance costs have been reduced 20% and more! This free analysis plan can save *you* money, too. Merely contact your local BFG retailer or mail the coupon below. Without cost or obligation, a trained B. F. Goodrich man will study your materials handling operations. He will tell you what type and size tires, what tread design and compound will serve you best.

The advice and counsel you get will be unbiased, for B. F. Goodrich makes a *complete* line of industrial tires. A special TW Analysis is available for manufacturers of industrial hauling equipment.

AVOID TIRE FAILURES LIKE THIS. Poor adhesion of rubber to steel caused this tire to fail prematurely. The chart below, based on extensive comparison tests of leading makes of tires, proves the superior adhesion qualities built into BFG solid industrial tires.

Tests Prove B. F. Goodrich Adhesion Best



The B. F. Goodrich Company
Tire & Equipment Division
Department TW-374, Akron 18, Ohio
Please send me:
☐ Additional information on your Tire and Wheel Analysis Plan
☐ Free copy of "Industrial Tire Guidebook"
☐ Free copy of "How to Get Extra Service Out of Solid Industrial Tires"
Name_____
Company_____
Street_____
City_____ Zone____ State____

Specify B. F. Goodrich tires when ordering new equipment

If you write maker identify as IEN - 3302

TIMING . . Interval unit for circuit delay opening and closing

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Semi-flush mounting

A delay interval is inserted, by this new Type TSA-18 timer, independently in both the closing and opening actions of an electric circuit. The unit is available in single and two circuit assemblies, the latter shown in the illustration. Any combination of the units can be employed to control 3, 4, 10 or more circuits. Contact rating is 10 amp. on 110-volt ac., 5 amp. on 220 volts.

The assembly employs nylon gears, a zinc alloy housing and a dust resistant cover. Knobs are set on dials on the housing face for the desired "start" and "stop" delays. Overall dimensions are about 5¾ by 5¾ by 8⅛ inches. Weight is 6¾ pounds.

If you write maker identify as IEN - 3303

ELEVATOR . . Hydraulic lift table raises the operator with his work

Source: SERVICE CASTER & TRUCK CORP.
545 N. Brownswood Ave., Dept. IEN, Albion, Mich.

Built to order

Lowered height of this new motor driven hydraulic lift table is 40 in. from the floor to the table top and, at this point, the operator's platform is just a little above ground level. Operating the control at the side of the work platform starts the motor driven pump to raise the table and platform through 30 in. to a maximum height of 70 in. above the floor.

The table top measures 36 by 48 inches. It is equipped with two 18-in. rollers on the 48-in. sides. The motor operates on 550-volt three-phase 60-cycle ac. The electric control is a 110-volt circuit. The equipment is available for specified electrical characteristics, dimensions, heights and load capacities.

If you write maker identify as IEN - 3304

Reproductible softening point tests for bituminous materials can be made on a new electric heater manufactured by American Instrument Co., 8030 Georgia Ave., Dept. IEN, Silver Spring, Md. Heat input is controlled by a Variac variable transformer on the front of the rectangular heater housing. A shield surrounds the work space. A light at the rear illuminates the work which rides on a centrally located heating ring. The work surface measures about 12 by 12 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3305

For protection from jets . . .

Here, in this tank, great air pressure blasts water through iron fittings to test them for leaks. To protect his eyes from sudden escaping jets, this man watches through a vision strip of Libbey·Owens·Ford *Tuf-flex** tempered plate glass. *Tuf-flex* can carry more load and resist greater thermal shock than any ordinary glass.

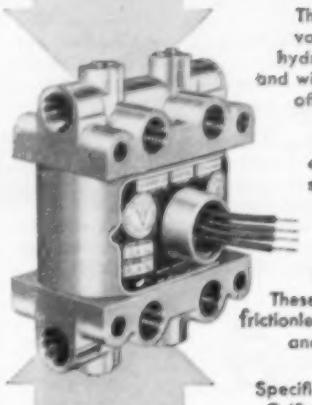
This is just one example of how you can use glass to aid production. What other single material can be heat resistant, heat absorbing or heat insulating . . . transparent, translucent or opaque . . . patterned or plain? For your free copies of "*L·O·F Glass for Product and Engineering Design*" (SPD-54), and the *Tuf-flex* booklet (TF-8), write to Libbey·Owens·Ford Glass Company, 9234 Nicholas Building, Toledo 3, Ohio. *®

LIBBEY·OWENS·FORD GLASS COMPANY

If you write maker identify as IEN - 3306

SKINNER 4-WAY SOLENOID VALVE

. . . operates double-acting cylinders or 2 single-acting cylinders



These new, smaller Skinner Four-Way valves are leakproof, suitable for air, hydraulic oils and other common media, and will operate in any position. They are offered in 176 standard variations of capacities, metering and types.

V9 valves can complete millions of cycles — without maintenance — at speeds up to 600 cycles per minute.

V9 Series valves are available in three basic types: normally closed, normally open, or combination — normally open and normally closed.

These valves are superbly built; packless, frictionless construction eliminate sliding seals and close fits. Bodies are die-cast zinc; internal parts of stainless steel.

Specifications: Pressure Range: 50-150 PSI; Orifice Diameters: 3/64" to 1/8"; Pipe Size: 1/4" NPT. Electrical Outlet: 1/2" NPT conduit; Voltages: continuous duty coils for all common AC, DC voltages.

Guaranteed for 1 year against defects in materials or workmanship. Immediate delivery on stock valves.

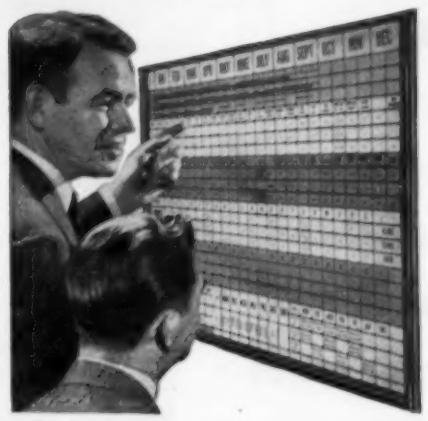
SKINNER V9 SERIES

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY

110 Edgewood Ave., New Britain, Conn.

If you write maker identify as IEN - 3307

GRAPHIC VISUAL CONTROL



THE BOARDMASTER SYSTEM

- ★ Graphic Picture of Your Operations—Spotlighted by Color
- ★ Facts at a Glance—Saves Time and Eliminates Confusion
- ★ Simple and Flexible—Easily Adapted to Your Operations
- ★ Easy to Operate—Type or Write on Cards, Snap on Board
- ★ Ideal for Production, Scheduling, Inventory, Traffic, etc.
- ★ Compact, Attractive. Made of Metal. In Use 6 Years.

Complete Price $49.50 Including Cards

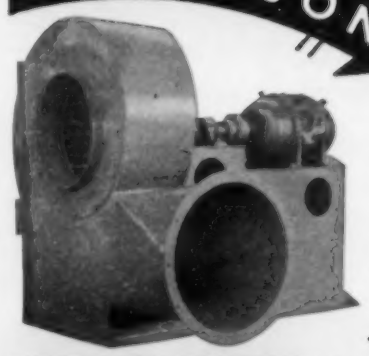
FREE 24-Page ILLUSTRATED BOOKLET E-100 Without Obligation

GRAPHIC SYSTEMS, 55 West 42nd St., New York 36

If you write maker identify as IEN - 3308

LET ROBINSON DESIGN YOUR FORCED DRAFT FAN!

ROBINSON



FORCED DRAFT FAN

ROBINSON VENTILATING COMPANY
ZELIENOPLE, PENNA.

Designed to meet your specifications as to volume and pressure . . . High efficiency . . . Saves money in power cost during long service.
Let us select and design a Robinson unit for you.
For supply combustion air to Boilers . . . Open Hearth Furnaces . . . Reheat Furnaces . . . Heat Treating Furnaces . . . etc.

WRITE TODAY FOR BULLETIN No. 2101.

MAKERS OF FANS AND VENTILATING EQUIPMENT FOR FIFTY YEARS

If you write maker identify as **IEN - 3309**

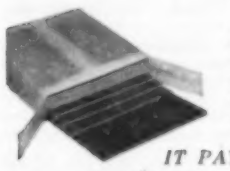
ISOMODE* PADS...

money-saving "shoes" for busy machine feet!

Now you can successfully isolate vibration, muffle plant noise, and cut down maintenance bills by using low-cost Isomode Pads.

Made of DuPont Neoprene, these pads resist oil and water, actually last for years. In thousands of installations, they have already proved their ability to swallow up troublesome machine shock and vibration. Even that of giant punch presses.

Installation is quick, easy. And there's no waste – you use only as much as you need. Simply cut an Isomode Pad to size and install under equipment. Results: Machines stay put without bolting, floors and building remain undamaged, working conditions are improved, and machine maintenance is cut.



Try a package of Isomode Pads and see. Write for full details and price list. **Trade Mark*

IT PAYS TO KEEP A PACKAGE ON HAND

THE MB MANUFACTURING COMPANY, INC.
1064 State Street, New Haven 11, Conn.

If you write maker identify as **IEN - 3310**

Production
Soldering
BETTER JOBS FASTER
more
Economically

Complete with Fixtures and Conveyer

Save Labor, Solder... Increase Production

This new MOGUL unit is built to deposit silver, lead, and tin base solders in a liquid or semi-liquid form ... faster, cleaner ... to any constant moving part. This new automatic soldering gun replaces the soldering bath, hand soldering, and in many cases, expensive fixtures. Quickly adapted to various size parts. Adjustable to speed of work ... gives pin-point location for cleaner seams.

BETTER WORK APPEARANCE

Deposits solder or brazing wire to the exact spot for cleaner seams. This new MOGUL soldering gun is now in wide use, saving time and money, increasing production, and turning out a better-looking product.

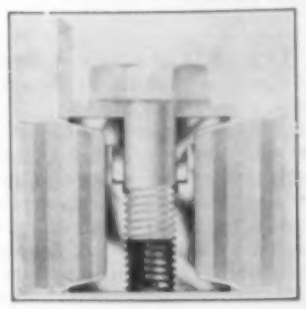
Write today for new MOGUL SOLDERING GUN bulletin

METALLIZING COMPANY OF AMERICA
Dept. IEN
3520 W. Carroll Avenue, Chicago 24, Ill.
Telephone: SAcramento 2-3710

If you write maker identify as **IEN - 3312**

FASTENING . . Threaded spacer prevents deforming flexible structure

Source: DELRON COMPANY
5224 Southern Ave., Dept. IEN, South Gate, Calif.



For light loads

A threaded sleeve receives the attaching bolt and eliminates the need for a nut in this new design of threaded spacer, previously described IEN-11386-52. The spacer provides a means to attach conduit, cable, instruments or equipment to sandwich type structures without danger of crushing the panels, or to soft wood such as balsa or any fragile structure where fastening **take-up must** be limited to a specified grip length. The fastening is available with sleeves threaded 6-32, 8-32, 10-32, 1/4-28. Grip length ranges from ⅜ to 1¼ inches. The material is 24 ST-3 anodized aluminum alloy.

If you write maker identify as **IEN - 3313**

MUFFLER . . Absorption design for pneumatic intakes and exhausts

Source: BURGESS-MANNING COMPANY
749 Park Ave., Dept. IEN, Libertyville, Ill.

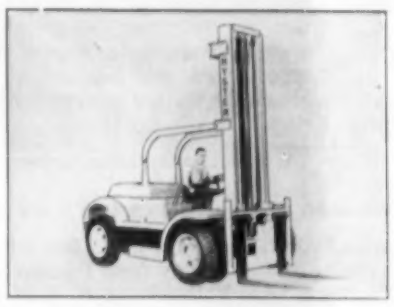
Please note our error

We should have been more specific in our description of the company's new Series CA and Series LCA mufflers, previously described IEN-697-54. Both series apply to quiet the noise produced by air compressors, blowers, vacuum pumps and other machines expelling high velocity air to the atmosphere. Standard design in both series is for operation under moisture free air conditions and for temperature to 200 deg. F. Special sound absorbing material can be used for operation at higher temperatures than the standard 200 deg. F. Designs are available to silence noises on both intake and exhaust.

If you write maker identify as **IEN - 3314**

TRUCK . . Engine driven fork lift carries 7½ ton over rough ground

Source: HYSTER COMPANY
2902 N. E. Clackamas St., Dept. IEN, Portland 8, Ore.



Specifications on request

Model RC-150 is new in the company's line of industrial trucks. It is designed for operation indoors or outside over smooth or rough ground. It is mounted on 8.25 by 20 pneumatic tires and is driven by a water cooled gasoline engine. Its rating, 7½ ton, is based on 24-in. load centers. The operator rides in comfortable seated and protected position.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3315**

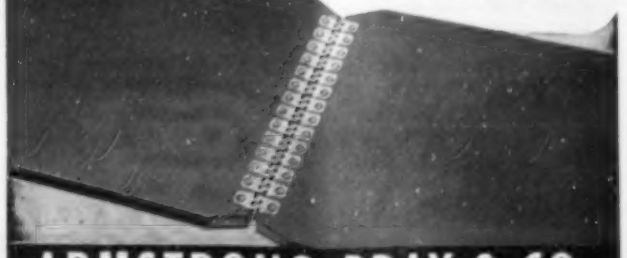
HINGED PLATEGRIP
BELT FASTENER No. 500

For Heavy Conveyor Belts of Changing Length

These heavy-duty belt fasteners make a strong, flexible joint in conveyor belts, belts of any width and of from ⅜" to ½" thickness. They offer special advantages in mines, quarries or industrial setups where length or position of belt is frequently changed, because sections can be removed or added at will. Joints are opened for this purpose by simply pulling out the hinge pin.

Easily and quickly applied on the job or in the shop. Special design gives deep compression into belting and smooth, flush joint.

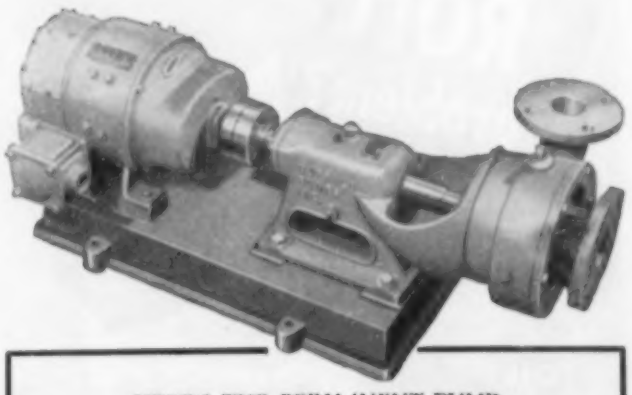
Write for circular



ARMSTRONG-BRAY & CO.
5180 NORTHWEST HIGHWAY CHICAGO 30

If you write maker identify as **IEN - 3316**

• FOR CHEMICAL LIQUIDS • FOR ZONE AIR CONDITIONING • FOR GENERAL SERVICE



HERE'S THE *PERMANENT* PUMP TO DO THE JOB AT LOWEST COST!

"Buffalo" Single Suction Type CS Pumps have oversize shafts and full ball bearings to withstand the severest strains of constant operation at high speeds. This enables you to select a pump for the desired capacity, and keep maintenance costs down. Other features are enclosed impellers which do not lose initial high efficiency; interchangeability of parts and accessibility for servicing. Available in iron or most machinable alloys.

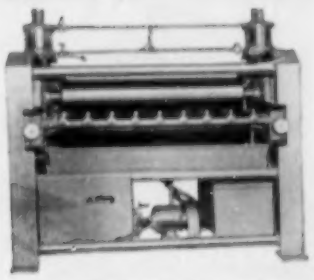
WRITE FOR BULLETIN 976-D

BUFFALO PUMPS, INC.
496 Broadway Buffalo, New York
Subsidiary of Buffalo Forge Company
Canadian Pumps Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

If you write maker identify as **IEN - 3317**

UNION AUTOMATIC COMPOUND SPREADERS

SAVE *8 WAYS



1 "Die life increased 75%."
2 "Production increased 20%."
3 "Compound saving of 16%."
4 "Rejects reduced 10%."
5 "One helper eliminated."
6 "Paid for itself in 54 days."
7 "Able to use salvage stock for some operations."
8 "25,000 more pieces before changing dies."

MODELS TO FIT ANY STOCK UP TO 96" WIDTH

Union is the foremost designer and manufacturer of roller coating machines for application of drawing or stamping compounds and protective coatings.

Models may be equipped with hardened steel, or with neoprene-covered rolls—also with heated or cooled rolls—to meet your individual requirements.

*The above claims are based on actual statements by users, both large and small—a number of whom have ordered a second and third machine.

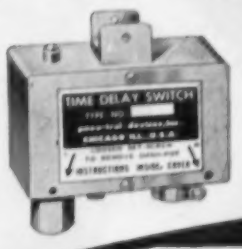
Complete data and agent's name on request. Union will design and/or manufacture coating machines to meet your specific requirements.

UNION TOOL CORP.
320 E. MARKET ST., WARSAW, IND., U.S.A.

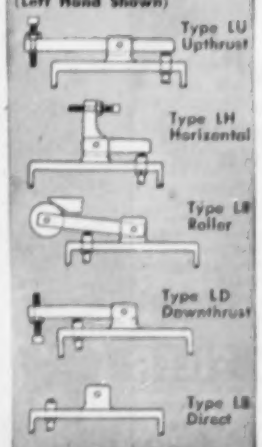
USERS SAY UNION CUTS COSTS, SPEEDS PRODUCTION

If you write maker identify as **IEN - 3318**

NEW CYLINDER TIME DELAY CONTROL SWITCH
INCREASES APPLICATION . . . WIDENS USE OF CYLINDER POWER

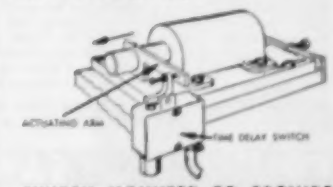


For Any Type Actuation Left or Right Hand (Left Hand Shown)



Pneu-Trol Time Delay Switches provide independent hydraulically controlled adjustable time dwell between ¼ and 60 seconds in 20 to 1 ratios. Readily mounted on machine for cylinder dwell at a positive stop. Compactly designed — a simplified low cost answer to electrical time dwell control of any air or hydraulically operated machine movement such as press work, burnishing, coating, quenching, Metal-cutting, etc. Ideal for automatic feeders.

Dimensions: 4⅛" wide; 2⅜" high; 1-7/16" deep. Overall height 4⅛".



SWITCH MOUNTED TO PROVIDE DWELL AT END OF POWER STROKE

Write for descriptive literature and complete details.

PNEU-TROL DEVICES, INC.
1438 N. Keating Ave. Chicago 51, Illinois

If you write maker identify as IEN - 3319

AA-367

IF you sell your products in rolls (like adhesive tape), or—if you use rolls in production (like printing or coating) then—**better rolls can build your profits** by reducing waste, by increasing production and by improving your products. Get the facts on Camachine roll slitters and rewinders, the **right** model for every material. Write today to

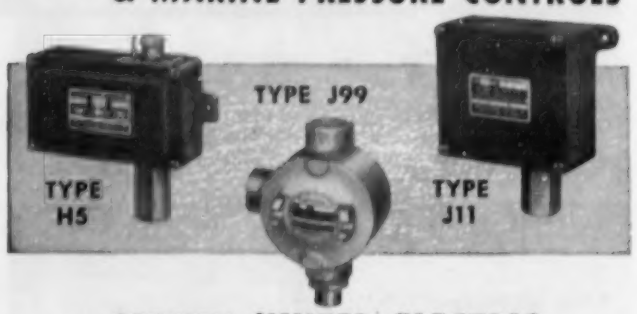
CAMERON MACHINE COMPANY
61 Poplar Street • Brooklyn 1, N. Y.

Camachine Commander High Speed Slitter Rewinder

Camachines

If you write maker identify as IEN - 3320

FOR EXTRA-RUGGED, INDUSTRIAL & MARINE PRESSURE CONTROLS



...SPECIFY *UNITED ELECTRIC*

Type J11 is a watertight, shock-resistant pressure control that is suitable for engine, marine or industrial applications involving control, to close tolerances, of air, gas or liquid pressures. Ideal where weather, shock and vibration are important factors. Write for Bulletin #5-6.

Type H5 Pressure Control is similar to Type J11 but also provides outside calibrated adjustment. Write for Bulletin #5-5.

Type J99 Explosion-Proof Pressure Control is a precision-built unit suitable for applications in hazardous locations where explosive vapors and gases are present. Write for Bulletin #5-8.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 3321

Your SAWS are no better than your SAW FILING

Inaccurate saw filing can ruin the cutting efficiency of the best saws, perhaps crack or break them. The machine precision of Foley Saw Filing can increase your sawing output 25% to 40%. The Foley *automatically* joints the saw as it is filed, making all teeth uniform in size, height, spacing. Foley-filed saws run cooler, cut fast, do beautiful work—and stay sharp longer.

30-DAY TRIAL of the Foley Saw Filer is offered—to show you what a difference Foley-filed saws can make.

FOLEY *Automatic* SAW FILER

FOLEY MFG. CO., 8369 N.E. 5th St., Minneapolis 18, Minn.
Please send literature on the Foley Automatic Saw Filer and details of your 30-Day Trial.

*Name*_____

*Address*_____

If you write maker identify as IEN - 3322

VALVE . . Pressure regulator holds constant pressure on inlet side

Source: A. W. CASH VALVE MFG. CO.
666 E. Wabash Ave., Dept. IEN, Decatur 60, Ill.

Bulletin KD-1

Type KD is a new valve designed to maintain constant back pressure on the inlet side regardless of variation in compressor suction pressure at the valve outlet and of changes in load or demand in a refrigeration installation. It can be employed with ammonia, freon or other refrigerant in any multiple evaporator installation where it is desired to hold the back pressure on any given unit higher than that prevailing in the compressor suction line.

A spring, above a diaphragm mounted between the body and bonnet flanges, exerts pressure downward. It is opposed by back pressure at the valve inlet which exerts force upward to the under side of the diaphragm. The spring is adjusted to balance the desired inlet or evaporator pressure. Any upward change in valve inlet pressure lifts the diaphragm, increases the valve opening and restores correct back pressure at the valve inlet. Drop in back pressure causes the valve to assume a new position, in closing direction, restricting flow to maintain the pressure. The valve is available in pipe sizes from ½ to 2 inches. Face to face dimensions are 4⅞ to 9 inches.

If you write maker identify as IEN - 3323

FASTENING . . Snap retaining rings supplied in stacks with assembly tool

Source: INDUSTRIAL RETAINING RING CO.
8 W. Sidney Ave., Dept. IEN, Mount Vernon, N. Y.

Bulletin on request

New size, 0.062 in. in grip diameter for $\frac{1}{16}$-in. shafts, has been added to the company's line of snap retaining rings previously described IEN-13015-51. The line now includes a range of sizes for shafts from $\frac{1}{16}$ to 1 in. in diameter, in carbon steel, beryllium copper and phosphor bronze. Each size is stacked on a rod that applies in a base fixture, as shown in the illustration, so the rings can be removed for application one at a time with a tool supplied for this purpose. The application tool and the fixture are provided free with each initial order of rings.

If you write maker identify as IEN - 3324

Specification 551 controls manufacture of a new alloy hollow drill steel now available in limited supply from Ingersoll-Rand Co., 746 Morris Ave., Dept. IEN, Phillipsburg, N. J. The steel forges and heat treats readily and requires only a simple annealing procedure for good machineability. Correct hardness is easily attained. A shallow groove, rolled full length on one face of the hexagon and quarter-octagon sections, identifies it.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3325

For more efficient . . .

LIQUID HANDLING

USE...

BOWSER XACTO...

the world's most widely used meter!

If you measure liquids, you need Bowser XACTO meters. Many hundreds of users — handling hundreds of different liquids — have found it to be the easiest, most efficient, accurate and dependable method of control they have ever used. XACTO can do the same for you!

Push-button operation delivers predetermined quantities . . . eliminates guesswork . . . will even print a delivery ticket when desired.

Write TODAY for full facts on XACTO!

BOWSER, INC.
1338 Creighton Ave., Fort Wayne 2, Ind.

REGIONAL OFFICES: ATLANTA • CLEVELAND • DALLAS FORT WAYNE • KANSAS CITY • NEW YORK • SAN FRANCISCO • WASHINGTON, D. C. • HAMILTON, ONT.

If you write maker identify as IEN - 3326

TO MEET EVERY CUTTING NEED HOBBS HAND AND POWER SHEARS

JACQUES UNIVERSAL SHEAR

JACQUES, JR. CUTTER

Get the complete facts today! Write for catalog sheet describing any of these modern Hobbs Shears. No obligation.

Whether you need cutters for production work or for occasional use, you'll find the most efficient and most economical answer in the Hobbs line of Jacques Hand Shears and Hobbs Power Shears. They are specially designed to cleanly, accurately cut paper, plastic, fabric, laminations, leather, synthetics and many other materials from rolls and sheets. Ruggedly built, they have hardened steel blades — will give you years of trouble-free service.

For continuous or intermittent cutting in quantity, Hobbs offers you a powerized cutter with gauges that is adaptable to any production set-up. Cuts at speeds up to 87 strokes per minute. Completely automatic production cutters are also available.

The Jacques Universal Shear is complete with table and accurate gauges for cutting sheets into uniform strips ⅛" to 20" in width. Six sizes available — 30" to 60".

You can choose from 12 sizes of Jacques Bench Shears for cutting in widths up to 10 feet. Special tables and gauge arrangements to order. The Jacques, Jr. Cutter is an accurate, versatile all-metal unit for widths 12" to 36". Self-supporting clamp automatically holds material. Table and bench models available.

HOBBS MANUFACTURING CO.
40 SALISBURY ST., WORCESTER 5, MASS.
Chicago office at 549 West Washington Blvd.

EST. 1883 ***Manufacturers of Modern Converting Machinery***

Jacques Hand Shears; Hobbs Production Cutters, Corner Cutters, Slitters and Rewinders, Autotronic, Tri-Power and "Adjustable Die" Presses

If you write maker identify as IEN - 3327

Announcing a new DUMORE® Precision Handgrinder

Voltage — 115V or 230V AC-DC
Current — 3.0 amps
Horsepower — ¼
Speed, no load — 35,000 rpm
Duty cycle — continuous
Bearings — ball
Winding connection — series
Ventilation — internal fan
Temperature rise — 40° C
Finish — grey
Weight — 3 lbs., 3 oz. with cord
2 lbs., 11 oz. without cord
Length — incl. chuck 10¾"
Small dia. — 1 5/16"
Body dia. — 2 7/16"

DUMORE PRECISION TOOLS
The Dumore Company
1319 Seventeenth Street
Racine, Wisconsin

WATCH FOR A THIRD IMPORTANT ANNOUNCEMENT NEXT MONTH!

If you write maker identify as IEN - 3329

Robbins & Myers NEW J3 hoist.

beef

WITHOUT THE FAT

Featuring: new lower limit switch — heat treated steel, helical and straight gears—precision ground shafts—oversize ball bearings throughout — single unit cast aluminum alloy housing — plow steel cable — safety enclosed hook block — forged steel hook — safety push-button control — choice of lug, plain, geared or motor driven trolley mountings — 2,000 or 4,000 lb. capacities — R & M high torque hoist motor — single or 2 speed winding optional — magnetic disc type motor brake — and prices competitive with the cheapest hoists in this range! For complete details and address of local distributor, write for Bulletin No. 890. Please mention: INDUSTRIAL EQUIPMENT NEWS.

take it up with

ROBBINS & MYERS, INC.

SPRINGFIELD, OHIO | BRANTFORD, ONT.

If you write maker identify as IEN - 3330

The all NEW Series 35

(35,000 rpm)

Precision Handgrinder

. . . for use with tungsten carbide mills, high-speed cutters, mounted wheels and points, abrasive bands, etc.

THIS "midget miller" offers you an economical solution to a host of grinding, milling, finishing and polishing jobs on materials ranging from wood to hard alloy steel. Powered by a ¼ hp continuous-duty-rated Universal motor, it's available for 115V or 230V DC or AC 0-60 cycle operation.

Three micro-precision bearings seated in steel inserts cast into the grinder housing, assure lasting accuracy on close tolerance work. ⅛" or ¼" collet chucks available.

For complete details, see your Industrial Distributor, or write—

Also brand NEW. . .

the DUMORE Super-10

Here's a better-balanced, completely redesigned, new version of the popular Dumore Series-10 handgrinder. Powered by a 1/10 hp continuous-duty-rated Universal motor, it's recommended for both tool and die work where accuracy is a must and production bench work where full shift operation is necessary.

DUMORE PRECISION TOOLS

The Dumore Company

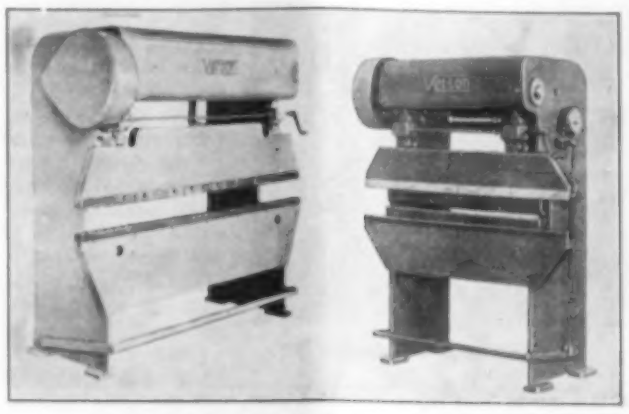
1319 Seventeenth Street • Racine, Wisconsin

Builders of precision line of Grinders, Automatic Drill Heads, Tool Post Grinders, Drill Grinders, Light Drilling Equipment, Flexible Shaft Tools, Hand Grinders, Fractional hp Motors and Gear Motors.

If you write maker identify as IEN - 3332

PRESS . . Power bending brake in two standard designs from stock

Source: VERSON ALLSTEEL PRESS CO.
9325 S. Kenwood Ave., Dept. IEN, Chicago 9, Ill.



Complete specifications upon request

Number 1062, rated at 25 ton, and No. 16-48, rating 15 ton, are new standardized power bending brakes offered by the company for immediate delivery from stock. The standardized design is built in quantity to minimize cost. The company is prepared to offer standard 90-deg. V-dies, also from stock.

The 25-ton machine will bend 78 in. of 16-gage mild steel over a ½-in. die opening. It is supplied with a bed and ram length of 78 in. and distance between housings at 62 inches. It has a 2-in. stroke and operates at 40 strokes per minute. It requires a floor space measuring 78 by 37 in. and stands 79 in. in height. List price with the drive motor and control is $2,190.

The 15-ton machine will bend 48 in. of 16-gage mild steel over a ½-in. die opening. Its bed and ram measure 48 in. in length. Distance between housings is 32 inches. The stroke is 2 in. and operation is at 20 to 50 strokes per minute. Floor space measures 48 by 36 in. and the machine is 66 in. in height. It lists at $1,455 with the driving motor and control. A 78-in. 90-deg. V-die lists at $124. A 48-in. die lists at $93.

If you write maker identify as IEN - 3333

MOTOR . . Miniature dc. unit for specified voltage, torque, speed

Source: GLOBE INDUSTRIES INC.
P. O. Box 101, Dept. IEN, Dayton 4, Ohio

Basic type SS

Moto-Mite trade names a new line of miniature dc. motors, particularly suited to drive airborne accessory equipment. Typical is the basic unit shown in the illustration. It measures ⅞ in. in diameter by 1⅜ in. in length. It has a stall torque of 1 in. oz. and a no-load speed of 14,000 rpm. for operation on a 27-volt dc. circuit. This unit weighs 2 oz. and meets standard Military Specifications. Its stainless steel shaft is mounted on factory lubricated permanently sealed ball bearings. The brush housings are molded plastic. The motor housing is made of aluminum.

Mounting is by means of threaded holes on the front face or by clamping around the motor diameter. The motor itself is completely enclosed to protect against entrance of moisture, dust, fungus and salt spray.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3334

MYSTIK BRAND

·SELF·STIK

NEW

Thinflex®

6207

MASKING TAPE

FASTEST and best masking tape made!

Extra thin . . . for cleaner, sharper-line masking. Greater *flexibility* . . . for masking curves faster. Extra *strength* . . . to hold positively yet strip off fast in one piece. Resists stains, oils, solvents—leaves no residue. Gives on-the-job speed and results for a faster, better job . . . *at lower cost.* Write for information and free samples. Mystik Adhesive Products, 2644 North Kildare Avenue, Chicago 39.

© MAP 1953 T. M. MYSTIK and THINFLEX Registered

If you write maker identify as IEN - 3335

Faster, More Economical Finishing for Leathers

● Tanners use Cyclone Flex-Grid Conveyor Belts to carry flat leather hides through coating, spray painting and other finishing operations. By eliminating many expensive and time-consuming hand operations, production is speeded up, costs are cut.

And the smooth metal of Cyclone Belts is easy to clean. For more information on Cyclone Conveyor Belts, get in touch with our experienced engineers or write Cyclone Fence, Dept. **C-34,** Waukegan, Illinois, for a free Conveyor Belt Catalog.

U·S·S CYCLONE

METAL CONVEYOR BELTS

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION, WAUKEGAN, ILLINOIS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

UNITED STATES STEEL

If you write maker identify as IEN - 3336

More and more mechanics say. . .

Our Pipe Wrench Replacements in '54 are being made with the NEW TOLEDO

TOLEDO Heavy-Duty Pipe Wrench

★ Unconditionally Guaranteed!

Just introduced—and making friends fast! See 'em—try 'em on your next job!

New Toledo Wrenches speed the work with easy handling . . . instant non-slip grip on pipe . . . replaceable jaws with spin-easy nut and single spring for quicker, easier setting . . . improved handle design for increased strength, better hand-grip. 6" to 48" sizes.

Unconditionally Guaranteed! If wrench housing or hook ever breaks or distorts, we will replace it Free. Write for new catalog. Order through your supply house. The Toledo Pipe Threading Machine Co., Toledo, Ohio. New York Office: 165 Broadway, Room 1310.

Rely on the Leader . . . all the way! **TOLEDO**

PIPE TOOLS • POWER PIPE MACHINES • POWER DRIVES

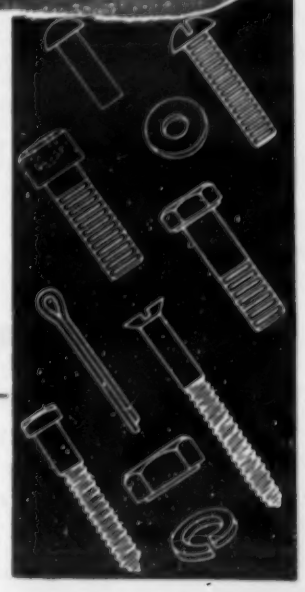
If you write maker identify as IEN - 3337

STOP CORROSION with HARPER

EVERLASTING FASTENINGS

BY THE DOZENS OR BY THE MILLIONS

If you use fastenings of brass, bronze, copper, monel, aluminum or any stainless steel, you can get what you want from Harper. Over 7,000 items stocked—all backed by Harper's advanced metallurgists and skilled engineers. See your Harper Distributor.



HARPER

EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog.

Name.....

Address.....

City.....*State*.....

If you write maker identify as IEN - 3338

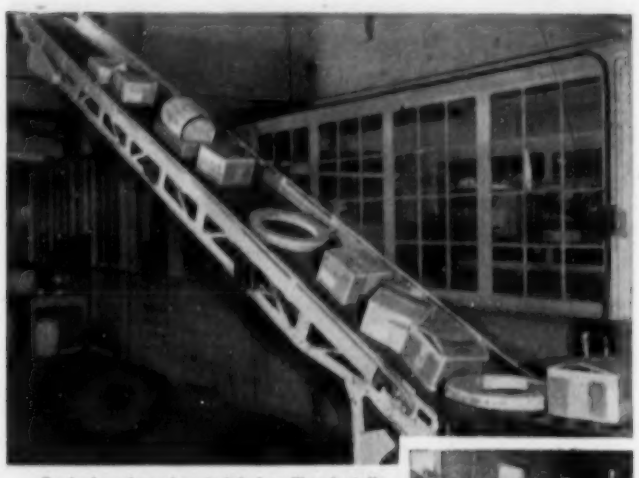
cut your operating cost
save valuable plant space
minimize maintenance . . . . . .

because Abart Speed Reducers are the product of specialists . . . designed and built by craftsmen *long and specially* experienced in the principles of power transmission . . . you can depend on Abart units for the service required. *Efficient—Durable—Compact—Self-Lubricating* Abart Speed Reducers are available in 75 sizes in spur, worm and combination, single and double reduction units—rated from 1/50 to 168 hp. with ratios up to 10,000 to 1.

Write today for free data-packed pocket-size catalog

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears, Speed Reducers and Gearmotors

If you write maker identify as IEN - 3339

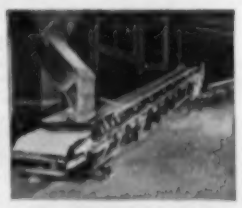


Typical packaged-materials-handling installation. Farquhar Conveyors stack, pile, store or move packaged materials from floor to floor faster and easier . . . make costly elevators unnecessary . . . cut your materials-handling costs to the bone.

Cement, fertilizer, foods, lime, and many other bagged materials move rapidly and continuously on Farquhar Conveyors the world over.

You Name It... We'll Move It!

Specify Farquhar for your Conveyor Problems!



Bulk materials — chemicals, sand, stone, etc.—present no problem when they're handled by Farquhar Conveyors.

SURE, there are probably some things that Farquhar Conveyors can't handle—like elephants, or battleships. But by and large, no matter what your materials-handling problem, Farquhar Conveyors can solve it. AND solve it at the *lowest* possible initial cost, *greatest* possible efficiency, and *smallest* possible unkeep!

Big claims? Sure! But Farquhar can back them up! Case histories in our files prove that Farquhar Conveyors are designed better, stand up better in use, and deliver greater efficiency and versatility. If you'd like to read about some of these success stories, mail the coupon below for your free copy of "Owners Report."

A complete line of Farquhar Roll-Free roller and wheel conveyors let gravity do the work for you!

Your particular problem may be similar or slightly or radically different from those in this booklet. Regardless, the same Farquhar experience, know-how and engineering skill that solved problems for people like you all over the world . . . can solve *yours!* A note on your letterhead will bring a Farquhar sales-engineer on the run—at no obligation, of course!

FREE! "Owners Report"—a booklet of case histories of money-saving conveyor installations.

OLIVER
Farquhar CONVEYORS
POWER-BELT AND GRAVITY CONVEYORS

THE OLIVER CORPORATION
A. B. Farquhar Division
Conveyor Dept. M-32, York, Pa.

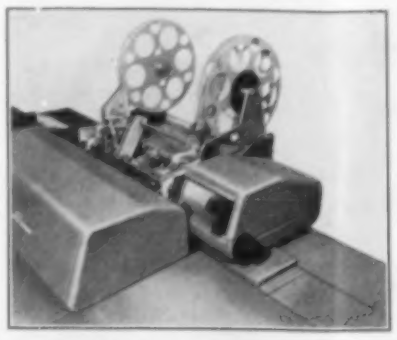
Gentlemen:
Please send me my free copy of "Owners Report."

Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

If you write maker identify as IEN - 3341

PRINTING . . Label attachment actuated by punched address cards

Source: INTERNATIONAL BUSINESS MACHINES CORP.
590 Madison Ave., Dept. IEN, New York 22, N. Y.



Continuous movement

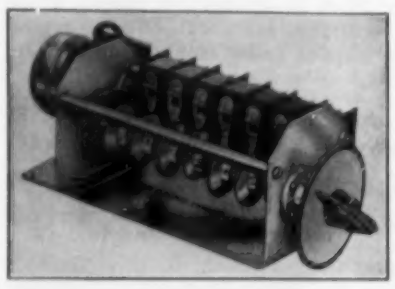
Nine thousand 3-line labels can be printed per hour by means of a new attachment developed by the company for its Type 407 punched card accounting machine. Paper tape is fed from one reel to another through the printing mechanism. One reel, 11 in. in diameter, holds sufficient tape for about 10,000 labels. The tape is punched, also, with the holes required to feed it into commercially available mailing machines during the printing operation.

The attachment is designed particularly for users of punched cards who have volume mailings at regular intervals. The cards minimize need for filing space and make it possible to select address classifications.

If you write maker identify as IEN - 3342

TIMING . . Multiple circuit assembly, motor driven for automatic sequence

Source: ZENITH ELECTRIC CO.
152 W. Walton St., Dept. IEN, Chicago 10, Ill.



Available from stock

New design of the company's multiple circuit timer, previously described IEN-5232-51, is intended particularly for time operated vending machines such as those employed for drink and coffee dispensing. Contacts in the new unit rate 15 amp. on 110-volt 60-cycle ac. The timer can be set for "on" and "off" periods with as many circuits as desired.

The assembly includes a bank of single-pole double-throw Micro switches mounted in line with a cam equipped shaft driven by a synchronous motor. The cams are adjustable to set the desired intervals. The timer can be supplied for single cycle or repeat operation. It also is available, without the motor, for connection to a drive source within a machine.

If you write maker identify as IEN - 3343

Oil stones and dry stones, for use by tool makers and for applications in machines, are available in packages of 50 from Random Abrasive Co., 449 N. Central Ave., Dept. IEN, Orange, N. J. Thin-Stix measure about 2 in. in length with thickness and widths varying from about 0.04 to ½ in. or more. A package lists at $7.50. Lap packages are made up of random widths and thicknesses in 1-in. length. Each package lists at $5.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3344

with **AURAND CLEANING TOOLS**

Clean off accumulation of scale, paint, rust or any foreign matter from any hard surface with Aurand Cleaning Tools. Toothed cutting wheels, loose pinioned on rotating head chip away accumulations at high speed. Positive depth shoe prevents cutting into permanent surface and assures uniform cleaning of entire area.

FOR FULL DETAILS, WRITE DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 3345

PULSOLATOR

The Automatic Lubricator that can be 400 places at once as often as 20 times a minute

Yes, Pulsolator can dependably lubricate as many as 400 bearings with a controlled quantity of oil, as frequently as 20 times a minute, through a single system with loop line up to 300 feet.

Here is your answer to reliable, automatic lubrication for machine tools, printing presses and similar equipment where the higher pressures of force feed systems are not essential. Pulsolator can save you money by eliminating oil waste and repairs and down time that come from lubrication failures resulting from human oversight or neglect.

Systems with various capacities and with both gravity and pressure feeds are adaptable to an endless variety of applications. Let experienced Manzel engineers show you how Pulsolator automatic lubrication can lower your costs and speed production efficiency. Write:

Manzel
DIVISION OF FRONTIER INDUSTRIES, INC.
242 BABCOCK STREET, BUFFALO 10, N. Y.

If you write maker identify as IEN - 3346

would you . . .

put bicycle tires on a ten ton truck?

Of Course Not! Trucks demand *heavy-duty* tires . . . tires *designed* to do the job required.

In like manner, CORTLAND EMERY AGGREGATE was *specially designed* to give you *strong, hard, wear-resistant, non-brittle* EMERI-CRETE FLOORING® in those areas where other flooring materials fail to take the punishment imposed. Further, EMERI-CRETE FLOORING is *non-absorbent* and *non-slip.*

Our representatives will welcome an opportunity to discuss your heavy-duty flooring problems. Drop us a card or attach this ad to your letterhead and ask for your free copy of "The Romance of Emery".

EMERI-CRETE FLOORING

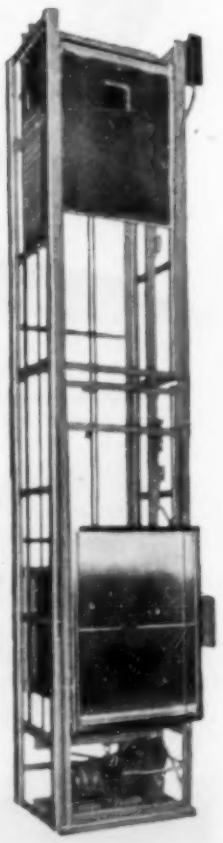
Made with
CORTLAND EMERY AGGREGATE
WALTER MAGUIRE COMPANY, INC.
60 East 42nd Street
New York 17, N. Y.

If you write maker identify as IEN - 3347

Doubly-Profitable Remodeling Tip:

install labor-saving

MATOT DUMB WAITERS



Space, time, labor and related savings are practically unlimited with MATOT "Not-so-dumb" dumb waiters—in factories, stores, institutions.

Only MATOT offers *extra* automatic features for faster service and trouble-free operation.

Hotels, restaurants, institutions, schools, industry and commercial buildings will profit with MATOT installations. Obviously, there's profit in such installations for you too.

MATOT Equipment Includes:

- Electric Dumb Waiters
- Hand Powered Dumb Waiters
- Hand Powered Elevators
- Invalid Elevators

See Sweet's File 33A for complete information, or write now for 8-page MATOT Catalog and Specification Guide.

D. A. MATOT, INC.
1539 W. Altgeld St. • Chicago 14, Ill.

If you write maker identify as IEN - 3348

For maximum "see-ability"... better work...increased production

LUSTRA JADE-LITE

LUSTRA JADE-LITE gives a special quality of light that steps up "see-ability". In addition, its unique tone reduces glare, helps eliminate eye-strain, produce better work and boost production. Jade-Lite is absolutely tops for use in critical work areas. Write for the whole story on Jade-Lite Fluorescent Tubes—it can bring new efficiency and economy. **Lustra Corporation, Dept. P-3, 36 Washington St., Brooklyn 1, N. Y.**

Lustra
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

If you write maker identify as IEN - 3349

Look... the New 40A

RIDGID Tristand

with built-in folding tray

Tray pushes up easily to fold Tristand, pushes down easily to set up. Holds stand rigid.

Vise base overhangs front legs so threader handles swing clear. Perfect tripod and balance.

The Tristand you've been wanting. Now stand and tray all one unit—no loose parts. Extra-light weight, stronger more rigid than ever. Full size vise base—3 benders, ceiling brace screw, pipe rest, new tool-hanging slots. Designed for the utmost service for your money. See the new RIDGID 40 A Tristand at your Supply House! Immediate deliveries!

Folds up small as ever for easy carrying to job and it's extra lightweight.

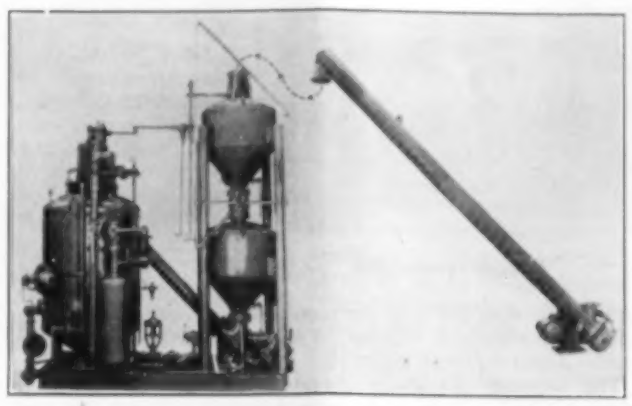
THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U.S.A.

RIDGID
Work-Saver Pipe Tools

If you write maker identify as IEN - 3351

GENERATOR . . Makes acetylene gas for constant output at medium pressure

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Dept. IEN, New York 17, N. Y.



Capacity to 9,000 cfh.

Two hoppers, one above the other, supply carbide to the variable speed feed screw that leads upward from the bottom hopper to the gas generating chamber in this new Oxweld NA-7 equipment. The upper hopper serves to replenish the carbide supply in the lower hopper without stopping steady feed to the screw. The upper hopper can be recharged while the lower one continues to supply the carbide.

A linkage, pneumatic-mechanical, between the pressure controller on the generator and the variable feed drive for the screw regulates the rate of generation by controlling the feed screw speed. As a result the acetylene gas is delivered at a constant pressure in step with the changing requirements and no surplus gas storage is required. In addition to the carbide feed, automatic controls regulate water level, fresh water supply, temperature, pressure and discharge of water and residue. A back pressure valve prevents service line reverse flow.

The equipment has been accepted by Underwriters' Laboratories, Inc., for listing under its Re-Examination Service. Floor space measures 10½ by 6 feet. Height is 13½ feet.

To the right in the illustration is a carbide screw elevator that can be employed with the generator equipment to feed ⅜ in. by D, or smaller carbide, to the receiving hopper at the rate of approximately 200 lb. per minute. A current type relay stops the action when the hopper has been filled. The operator can restart by turning a switch. Fittings are available so carbide from drums, or a 5-ton rectangular bulk container, can be delivered into the upper hopper. An atmospheric vent on the screw housing assures safe operation. Air is excluded from the generator hopper during the recharging process. The elevator measures about 8 ft. in length. It stands normally at a 45-deg. angle.

If you write maker identify as IEN - 3352

MELTING . . Electric tank to hold hot dip coating plastics

Source: EVENS-THOMPSON MFG. CO.
11360 Kaltz Ave., Dept. IEN, Center Line, Mich.

Mounts on bench

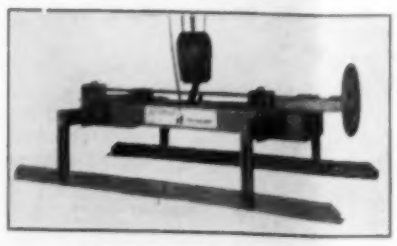
Steel sheathed electric heating elements are employed with an aluminum pot of rectangular outline and inward sloping top flanges in this new Model-35 melting tank. The work chamber holds 3.6 gallons. Overall dimensions are 15 by 18 by 19 inches. Weight is 32 pounds. A cover completes the assembly.

Dripping plastic is directed back into the melting chamber by the sloping top flanges. Insulation, between the chamber and the outer steel housing, conserves heat and keeps the outer surfaces cool. Control is by Robertshaw equipment.

If you write maker identify as IEN - 3353

HANDLING . . Sheet metal grab is hand wheel operated, 3 to 10 ton

Source: H. L. BUSHMAN COMPANY
5729 W. Lake St., Dept. IEN, Chicago 44, Ill.



Can be motor operated

Three capacities rate 3, 5 and 10 ton in this new Sheet Lifter grab. The smallest unit is available in three width ranges, minimum at 12 to 36 in. and maximum at 21 to 63 inches. Three sizes in the 5-ton assembly are adjustable between 18 to 54 in. and 24 to 72 inches. Two sizes rating 10 ton are 20 to 60 in. and 24 to 72 inches.

Height, from the load carrying rails to the bottom of the assembly beam, is 9, 12 and 15 inches. Overall length, in each case, is 84 inches. The hand wheel connects through worm gearing to make and lock the width adjustment, to pick up and release sheet metal loads. The rails prevent damage to the load and hold it straight while it is being carried.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3354

DE BURRING Made Easy!

It is amazing how soon these Abrasive Belt Machines pay for themselves.

11 combinations available with or without Duskolector.

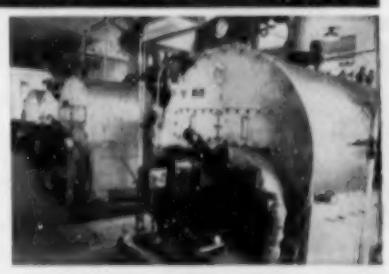
"Clip" this ad to your letterhead 20 page catalog will be sent at once.

Hammond Machinery Builders
1607 DOUGLAS AVENUE KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 3355

How TWO Dutton EconoTHERMS CAN CUT YEARLY STEAM COSTS

through
Off-Center Firing
•
Rotary Combustion
•
Gas or Oil Firing
•
One "Package"—Factory Tested
•
No Costly Chimney or Foundation



DO YOUR DAILY and seasonal steam loads vary widely? Many owners find that two or more Dutton EconoTherm Boilers give big advantages over a single larger unit—especially in lower total steam costs!

WITH TWO OR MORE EconoTherms, you can meet varying steam demands fast—and at peak fuel efficiency. Yet you save fuel each day and all year by operating just one unit during warmer weather, "off hours", nights, week-ends and holidays.

MULTIPLE UNITS give extra protection from plant shutdowns . . . and as your plant grows, it's easy to add another "packaged" EconoTherm. Because steam costs depend mostly on fuel and labor costs, every EconoTherm feature is designed to keep costs low!

CALL YOUR DUTTON REPRESENTATIVE—he'll carefully analyze your particular needs and offer cost-cutting suggestions.

WRITE FOR DUTTON ECONOTHERM BULLETIN EC-32M

Dutton BOILERS
DIVISION HAPMAN DUTTON COMPANY
KALAMAZOO, MICHIGAN • BOILER BUILDERS SINCE 1880
FOUR TYPES - SIZES FROM 5 TO 300 H.P.

If you write maker identify as IEN - 3356

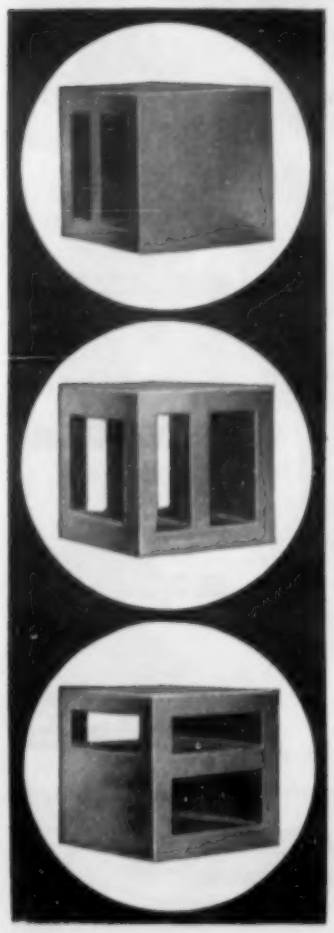
IN KING TUT'S TOMB
NO MUMMY CURDLES:
WHEN F. O. S.®†
THEY USE AS GIRDLES!

You tape it best with F.O.S. Industrial Tape . . . product of

THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U.S.A.

Write for samples, literature, prices †Friction One Side

If you write maker identify as IEN - 3357



3 IN 1

COMBINATION TOOL

CHALLENGE UNIVERSAL BOX ANGLE

This new versatile tool has the clamping facilities of an angle iron . . . the stability, balance and accuracy of a box parallel . . . the perpendicular flat surface of an angle plate. Made of high grade special analysis semi-steel, heat treated and precision ground. Furnished in two sizes — 6x6x6 and 8x8x8 inches. Other sizes can be made to order.

747

Challenge TRADE-MARK ®

THE CHALLENGE MACHINERY COMPANY

Office, Factories and Show Room: Grand Haven, Mich.

If you write maker identify as IEN - 3358

Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of— BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS *Write for information*

If you write maker identify as IEN - 3359

your Lebanon Slide Chart

This new Lebanon Slide Chart gives you the reference facts you need on 19 carbon and low alloys and 17 stainless and corrosion-resistant alloys in regular use at Lebanon. Simply by adjusting the guide arrow at each grade reveals . . .

- *Nominal Analyses*
- *Minimum Mechanical Properties*
- *Standard Designations i.e. ACI, AISI, ASTM, Hydraulic Institute, SAE, Military and Federal.*

Just fill in the coupon below and your valuable Lebanon Slide Chart will be on its way to you.

Lebanon CARBON, SPECIAL ALLOY AND STAINLESS STEEL **Castings**

Lebanon Steel Foundry
Dept. M, Lebanon, Pa.

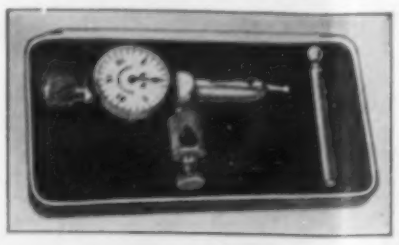
Please send me the new Lebanon Slide Chart

Name _____
Company Name _____
Address _____

If you write maker identify as IEN - 3360

GAGE . . Dial indicator reads to plus and minus 15 thousandths

Source: HAIRSPRING VIBRATING CO.
406 32nd St., Dept. IEN, Union City, N. J.



Rugged construction

Gem No. 222 is a new spiral actuated dial indicator designed for use in connection with metal working operations. The instrument provides true constant repeat readings in daily normal use. Its operating spirals are ground, plated and polished for free accurate action. Number 9 contact points are standard. Number 10 and 30 provide for readings in small and difficult locations.

The company maintains a factory service department to inspect and recondition indicators returned to it for this purpose. List price is $19.50 in a leatherette case. Additional contact points list at $1.20 to $1.85.

If you write maker identify as IEN - 3361

HARD BOARD . . Grain free panel made of defibrated wood fibers

Source: WEYERHAEUSER TIMBER CO.
703 Tacoma Bldg., Dept. IEN, Tacoma 1, Wash.

Technical data upon request

White fir wood is cut into chips and then is converted into fiber by rubbing the chips apart under a steam atmosphere to produce the material from which the company's new hardboard is manufactured. The fiber is felted and hot pressed into boards which are humidified to prevent warpage and then are trimmed and cut to specified size.

The board is light tan in color, smooth, glossy and surface hard. The edges are clean cut. Stiffness, traverse strength, impact and abrasion resistance are inherent characteristics. The board will withstand exposure to moisture, heat, sunlight, air, micro-organisms, vermin and rodents. It is dimensionally stable and can be cut and worked with the usual tools.

Regular types are made in 1/10, 1/8, 3/16 and 1/4-in. thicknesses with width at 4 ft. and length to 16 feet. A board, intended for floor underlayment, measures 7/32 in. in thickness. Typical applications include cabinets and backs, auto parts, furniture panels, drawer bottoms, sliding doors, display racks, core materials for veneers, metals and plastics, perforated board, plywood and hardboard combinations, table tops, bed head boards, waste baskets, millwork items, tiling, interior dry wall panels, templates.

If you write maker identify as IEN - 3362

LIGHTING . . Weather proof socket has rating of 600 watts on 600 volts

Source: RODALE MFG. CO.
Minor & 6th Sts., Dept. IEN, Emmaus, Pa.

Sealed assembly

Catalog 132 is a new weatherproof rubber pigtail socket approved by UL and SCA. Construction includes water tight sealing boots wired with 6¾ in. of No. 14 Type R wire, black and white stripped.

The water tight lead entrance extends ½ in. in depth to form a seal around the wire. Soldered eyelets assure electrical connection of the leads to the screw shell. Rubber construction creates a lip which provides a water tight seal around the lamp neck. Spreading, twisting or bending the leads cannot destroy the water tight construction.

If you write maker identify as IEN - 3363

STAPLING . . Pneumatic tool drives 14 gage ½ to ⅞ in. staples

Source: POWERS WIRE PRODUCTS CO.
1590 Pass Road, Dept. IEN, Monterey Park, Calif.

List is $100

Air pressure builds up to a predetermined point, upon depressing the throttle valve in the handle of this new Type AS-6 stapling tool. Latches release the piston, at the point of build-up, to drive a staple positioned by the magazine at the base. The piston is spring returned to latch in retracted position until air pressure is again applied.

The tool takes staples measuring 13/16 in. in crown dimension with leg length at ½, ⅝ and ⅞ inch. Operation is on 80 to 100-lb. air. Fast driving action minimizes recoil.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3364

"THOROUGH ELECTRICAL GROUNDING Pays Dividends in Service"*

VIBROGROUND

Makes Accurate Ground Testing Certain

● Whether your electrical grounding problems concern lightning protection, plant equipment or high tension lines—Vibroground ground resistance testing instruments are built to give you quick, accurate measurements that pay dividends in service.

Readings are unaffected by earth resistance or condition, stray frequencies, voltages or currents; and are independent of auxiliary probe resistances.

Write for details on Vibroground instruments and testing techniques today.

*9 out of 10 grounds tested by a large Utility proved ineffective. For fascinating details of how Vibroground made these findings possible write for reprint 105 E.

WRITE FOR YOUR COPY TODAY

ASSOCIATED RESEARCH, Incorporated
"Precision Instruments Since 1936"
3762 WEST BELMONT AVENUE • CHICAGO 18, ILLINOIS

If you write maker identify as IEN - 3365

"Huglock"

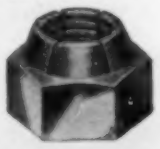
your assembly as a first line attack in a competitive market

Rear axle to spring U-bolt attachments are subjected to the most severe vibration, torque reaction and shock loads; especially in Hotchkiss Drives where both driving and braking loads as well as road shocks are transmitted through the assembly.

"Huglock" nuts, widely used as in this application, perform a dual purpose . . . insure the assembly being held to perform its full duty and reduce time of assembling . . . two prime considerations for an attack in a competitive market.

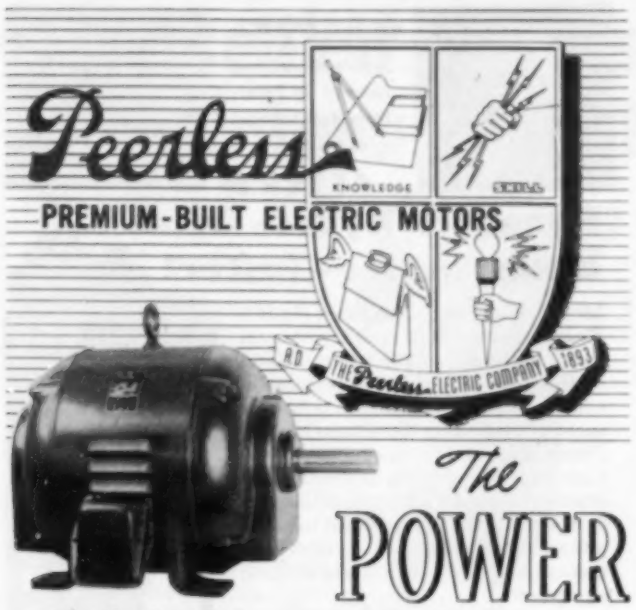
Write for literature and samples.

Manufacturers of Standard and Special HEXAGON Nuts . . . "HUGLOCK" and "MARSDEN" Locknuts.



National MACHINE PRODUCTS Company
44239 Utica Rd.
Utica, Michigan

If you write maker identify as IEN - 3367



The POWER

that builds reputations

Quality equipment producers protect themselves and you with Peerless premium-built electric motors.

Peerless Motors are expertly designed for these jobs . . . built by men skilled in their work . . . men who know the value of efficient, friendly service. The Peerless name . . . a name that for 60 years has stood as a symbol of quality and performance.

THE PEERLESS ELECTRIC COMPANY

MOTORS
FANS
BLOWERS

Peerless Electric

1415
W. MARKET ST.
WARREN, OHIO

If you write maker identify as IEN - 3368

The "Packing Package" No Hydraulic Fluid Can Attack

- Chem-o-green TEFLON Back-up Rings
- Chemiseal Synthetic Rubber "O" Rings

Chem-o-green Back-up Rings—made of duPont chemically impervious TEFLON—answer the "O" Ring extrusion problem. Three types—solid rings, split rings and the popular spiral rings for quick, easy installation.

- Eliminate chemical inspection.
- Zero swelling in hydrocarbons and newer synthetic fluids.
- Service temperature range from minus 110°F to 500°F.
- Waterproof, non-flammable.
- Requires no water-soak for installation.
- Unsurpassed anti-friction properties.

Chemiseal "O" Rings—a complete line of homogeneous synthetic rubber packings made in both AN and commercial compounds.

Both a "packing package", made in all standard sizes for "O" Ring gasket, packing and universal tube fitting services.

Take advantage of one source and one responsibility for this important "packing package". Write for Bulletin OB-1152.

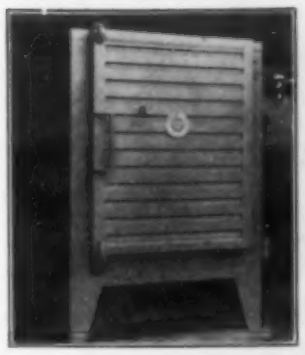
UNITED STATES GASKET COMPANY

CAMDEN 1 • NEW JERSEY
FABRICATORS OF duPont TEFLON, Kellogg KEL-F AND OTHER PLASTICS
Representatives in Principal Cities Throughout the World

If you write maker identify as IEN - 3370

HEATING . . Electric oven for general use, 100 to 450 deg. F.

Source: STEINER-IVES COMPANY
Springfield Road, Dept. IEN, Union, N. J.



For production

Cross flow circulation of air, by means of a 6-in. motor driven cast aluminum fan, assures uniform temperature in all parts of this new cabinet type electric oven. The oven has been added to the three smaller sizes, previously described IEN-13438-53. Its work chamber measures 37 by 26 by 50 in. and is equipped with six 36 by 25-in. shelves. These shelves are movable and can be positioned on 3 in. vertical centers.

Fresh air intake and exhaust are variable. Insulation is provided by 4 in. of mineral rock wool. Control is by means of Partlow indicating equipment. Operation is on 220 or 440-volt 3-phase 60-cycle ac., or other electrical characteristics as specified. Aging, baking, curing, drying, heat treating, normalizing, preheating, paint finishing are typical applications.

If you write maker identify as IEN - 3371

TESTING . . Heat indicating crayons designed to melt at given temperatures

Source: TEMPIL CORPORATION
11 W. 25th St., Dept. IEN, New York 11, N. Y.

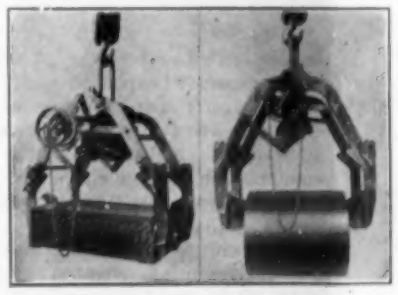
Accurate to a degree

The company announces availability of its Tempilstik heat sensitive crayons to read 425 and 475 deg. F. These two new ratings apply in the overall line which includes a range from 113 to 400 deg. F. in 12½-deg. F. intervals and from 400 to 500 deg. F. in 25-deg. F. intervals. Highest portion of the range is from 600 to 2,000 deg. F. in 50-deg. F. intervals. A liquid smear will show as soon as the temperature reaches the rating of the Tempilstik employed to mark a work surface.

If you write maker identify as IEN - 3372

HANDLING . . Convertible grab for both steel sheet and coil stock

Source: CULLEN-FRIESTEDT COMPANY
1300 S. Kilbourn Ave., Dept. IEN, Chicago 23, Ill.



The jaws can be locked open

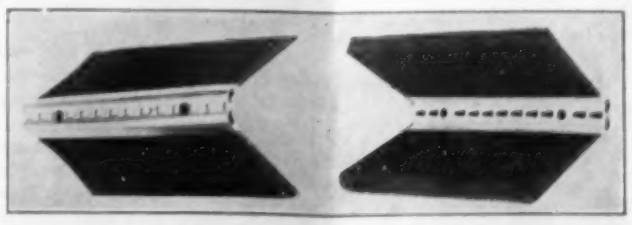
The load carrying angles at the bottom of the pivoted arms on this new convertible grab are employed to handle sheet steel in the usual manner, as shown to the left in the illustration. Coil-bearing segments, at the centers of the carrying angles, hinge down into load position when grab is to be employed on a coil, as shown to right.

The grab rates 10 ton of either sheet or coil stock. It is adjustable, in positive locking arrangement, for various load widths. It can be engaged and disengaged by one man operating the chain wheel from the floor level.

If you write maker identify as IEN - 3373

BRUSH . . Vee-strip design for mechanical cleaning operations

Source: STANLEY HOME PRODUCTS INC.
120 Pleasant St., Dept. IEN, Easthampton, Mass.



To meet your requirements

Tab-Strip trade names a new twin face brush which the company is prepared to manufacture to meet specified requirements for both size and intended service. The brush can be attached to various types of machines. It is mountable in wood or metal cores. Its two faces can be set at a specified angle. Construction consists of two strips of W-shaped steel backing joined by tabs and anchoring filler material ranging from soft hair to rigid steel wire.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3374

YOU CAN DO IT BETTER with HANSEN ONE-HAND TACKER

MODEL T-3-4 HANSEN TACKER

Only ONE of 1001 Uses

Tacking auto-seat covers, as shown, is but one of thousands of uses of HANSEN one-hand Tacker. Made in thirty-six models for driving staples in eighty sizes, HANSEN is adapted to scores of tacking, fastening and assembly jobs.

One-Hand Operation

Speed, precision, safety are combined in using the Hansen Tacker. Balanced design makes it easy to operate. One hand operates the Tacker, leaving the other hand free to hold materials.

HANSEN SAVES time — steps — materials

TIME—self-contained, ready for instant, continual use. STEPS — saves back-tracking for tacks. MATERIALS — precision driving, insuring neater, better work.

Request Booklet . . . today

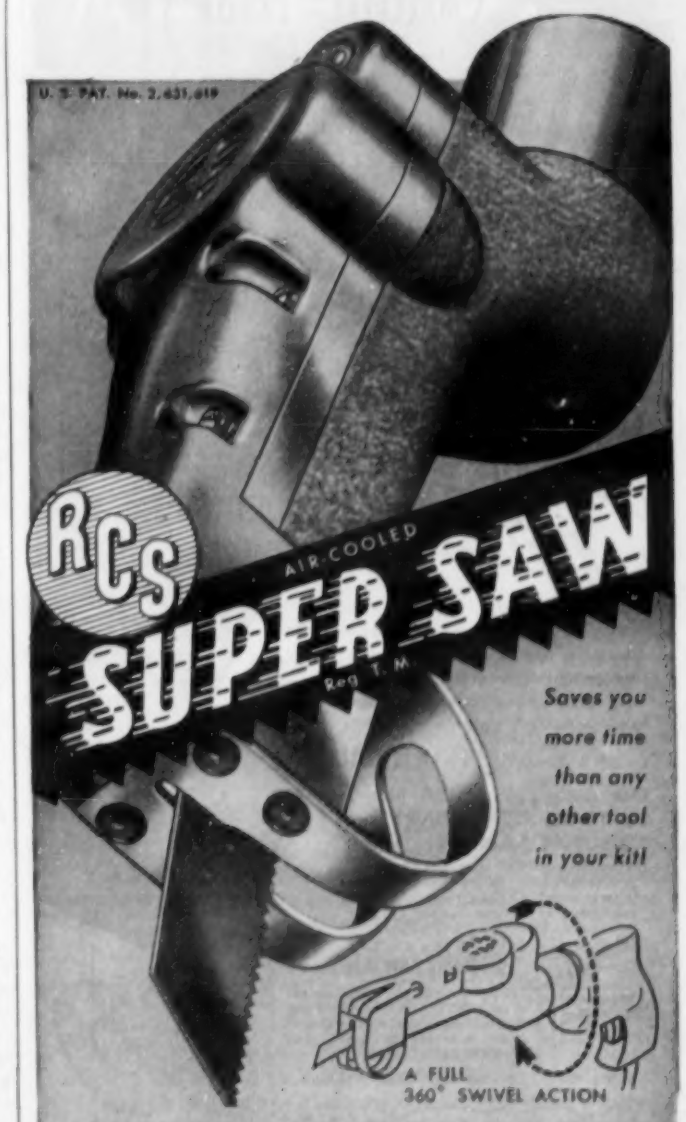
A. L. HANSEN MFG. CO.

5051 RAVENSWOOD AVENUE • CHICAGO 40, ILLINOIS

If you write maker identify as IEN - 3375

DESIGNED, BUILT and GUARANTEED

for constant, heavy-duty service!



A "lifetime" tool with built-in blower, ball and roller bearings, sealed lubrication, etc. Safe—(two-handed operation required). 360° swivel action for maximum versatility. Blades to cut everything including stainless steel. Fits your present ⅛" heavy-duty drill.

RCS TOOL SALES CORPORATION
JOLIET, ILLINOIS

Gentlemen:
Please send us Bulletin H-3 and the name of the nearest Super-Saw distributor.

Name_____

Address_____

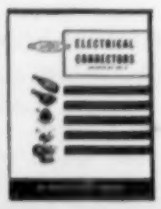
City_____ Zone____ State____

If you write maker identify as IEN - 3377

20 years makes any electrical connector a venerable old-timer and the JOY plug pictured above has faithfully served its owner (*name on request*) since '31. *Your portable electric connectors will also last longer and require less maintenance attention if they're JOY built.*

TODAY'S DESIGNS

Thousands of styles and shapes ranging from "Cartridge-size" to mammoth round units for heavy industrial use have been developed. NO question about it, the JOY electrical connector line deserves your earnest consideration. Ask for your free copy of bulletin MC108, now.



JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as IEN - 3378

REPAIR CONCRETE PLANT FLOORS by SAWING BEFORE BREAKING

. . . with a **Clipper CONSAW**

Save up to 50% in labor and material. Saw repair patches—saw gas, water, conduit, and air line trenches in floors, runways and streets. Stops cracking and spalling—stops high maintenance costs.

. . . It's Yours on **FREE TRIAL**

Our Only Business for Nearly **20 YEARS . . . MASONRY and CONCRETE SAWING!**

The unqualified Clipper guarantee of satisfaction is backed by world wide experience, the ability to select the finest materials and the "know-how" to put them together

. . . by the **MASONRY SAW Originators**

Every shape and size refractory **cut in seconds!** Perfect fitting reline jobs that last longer—cost less. A Clipper Model to fit any job—any budget. SOLD ON FREE TRIAL.

MODEL HD — 15 MODELS PRICED FROM $265

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH — SEE BELOW

CLIPPER SUPERIOR DIAMOND BLADES

. . . guaranteed to . . . "Consistently Provide the fastest cut . . . at the lowest cost . . . with the greatest ease!" Clipper alone can supply every necessary metal bond . . . in over 36 specifications.

Clipper MANUFACTURING CO.

- CINCINNATI
- BOSTON
- WASHINGTON, D.C.
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- ST. LOUIS
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- DETROIT
- PITTSBURGH
- NEW YORK
- BIRMINGHAM
- DENVER
- LOS ANGELES
- INDIANAPOLIS
- ST. PAUL
- MILWAUKEE
- DALLAS

IN CANADA—P.O. BOX 476, WINDSOR, ONTARIO

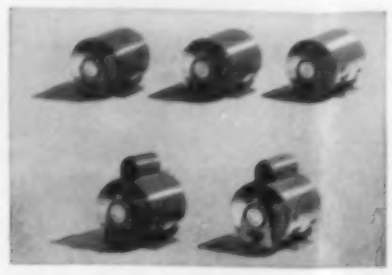
TEAR OUT AND MAIL!

CLIPPER MANUFACTURING CO.
11 E. 28th St. • Kansas City 8, Mo.
Send FREE Literature and Prices on: 17C-1
☐ CLIPPER CONSAWS ☐ CONSAW DEMONSTRATION
☐ CLIPPER MASONRY SAWS ☐ CLIPPER DIAMOND BLADES
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as IEN - 3380

MOTORS . . Two speed ac. for coolers, circulators, window fans

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Resilient bases

Split phase and capacitor start types with speeds of 1,725/1,140 rpm. are included in a new line of fractional horsepower ac. motors. The split phase models are rated at ⅙, ¼ and ⅓ hp. with operation on 110-volt 60-cycle ac. The capacitor start units are rated at ½ and ¾ hp. for operation on 110 or 220-volt 60-cycle ac. Single speed motors, for fan applications, are available in the same ratings. Mounting is in any position.

All units in the line are rated for 50 deg. C. temperature rise and can be supplied plain or with an automatic reset thermal protection. The blue-gray finish is resistant to attack by humidity, thermal shock and abrasion.

If you write maker identify as IEN - 3381

LADDER . . Extruded aluminum supports a work platform, 5 heights

Source: LOUISVILLE LADDER CO.
1101 W. Oak St., Dept. IEN, Louisville 10, Ky.

Reinforced design

Master Platform designates a new step ladder made of extruded aluminum sections. It supports a 14 by 19-in. work platform, also made of aluminum with a knurled non-slip surface. Braces lock the platform in position. A guard rail top is recessed to permit the worker to stand comfortably in the platform center. Steps are provided with serrations for safe footing. Corrugated rubber is applied on each of the feet. Five sizes range from 4 to 10 ft., measured to the platform. The guard rails stand 2 ft. above the platform.

If you write maker identify as IEN - 3382

FILTERING . . Porous steel unit for clarification, solids collection

Source: MICRO METALLIC CORP.
30 Sea Cliff Ave., Dept. IEN, Glen Cove, N. Y.

Assembled to order

Illustrated is new design of the company's porous metal filtering equipment to present multiple surfaces of porous stainless steel filtering elements. The equipment is recommended for clarification and solids collection from water, petroleum products, molten metals. The unit illustrated provides 30 sq. ft. of filter area in a stainless steel housing that measures 12 in. in diameter by about 20 in. in height.

The line includes equipment with areas to 720 sq. ft. and cake space capacity to 35 cubic feet. In each case the filter elements are porous stainless steel. The housing can be either carbon steel or stainless.

If you write maker identify as IEN - 3383

TRUCK . . Engine driven tractor with fluid coupling, rates 7,500 pounds

Source: CLARK EQUIPMENT CO.
Dept. IEN, Battle Creek 49, Mich.

7.50 x 16 tires

Clarktor-75 has been added to the company's line of engine driven towing tractors. The line has an overall rating of 500 to 12,000-lb. drawbar pull. The new assembly employs an 82-hp. Chrysler engine with a fluid coupling, planetary type drive axle, four-wheel brakes, hinged hood, front fenders and running boards. A two-man seat with a back rest, overhead suspension of the clutch and brake pedals, two sealed beam head lights, one tail light, a Hobbs hour meter with a pressure switch and a universal coupler with hand release complete the assembly. List price is $4,800.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

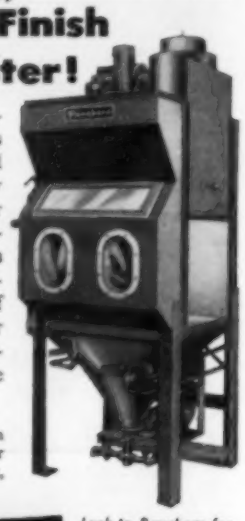
If you write maker identify as IEN - 3384

BEFORE

Mold cleaned and finished by Pangborn Hydro-Finish in minutes!

AFTER

Pangborn Hydro-Finish cleans better—faster!



Molds, dies, tools—Pangborn Hydro-Finish cleans them quickly, leaves them bright and ready to use! Hand cleaning and polishing is practically eliminated! And production is further speeded up because Pangborn Hydro-Finish, operated by one man, removes scale and discoloration in minutes instead of hours. In addition, the use of fine mesh abrasives suspended in water gives you a precision job . . . holds tolerances to .0001" . . . protects delicate equipment.

GET COMPLETE FACTS on Hydro-Finish and how it can save *you* money! Write for Bulletin 1400A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Md.

Pangborn

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment

BLAST CLEANS CHEAPER with the right equipment for every job

If you write maker identify as IEN - 3385

Comes in metal instrument chest complete with gas sampling accessories

ACCURATE CO_2 Analysis in 40 Seconds!

Other outstanding features of the FYRITE CO_2 Indicator are its durable, fool-proof construction and unmatched convenience of operation. It requires no setting-up, has no valves or leveling bottle to manipulate.

The FYRITE measures CO_2 directly by the fundamental method of chemical absorption. Consequently, the reading is independent of voltage, humidity, temperature, or atmospheric pressure conditions.

Comes complete with chemical charge good for at least 300 readings. Replacing chemical merely requires removing four screws that hold top assembly in place.

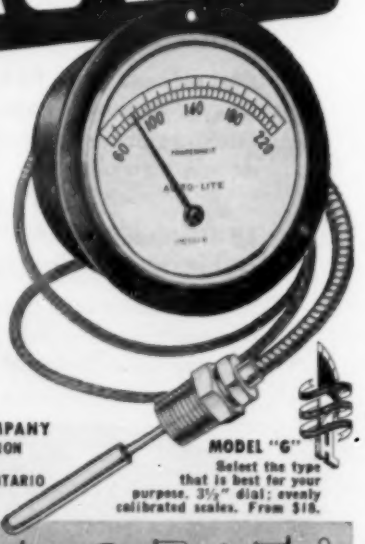
Write for Bulletin 805

BACHARACH Industrial Instrument Company
7301 Penn Avenue • Pittsburgh 8, Pa.

If you write maker identify as IEN - 3386

for Eye-Level Readings . . .

AUTO-LITE



TEMPERATURE INDICATORS . . .

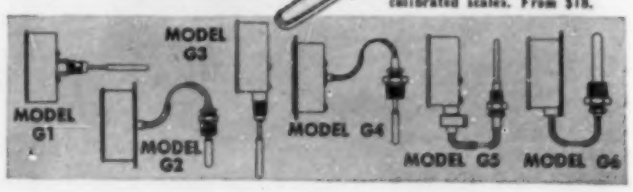
Precision-built indicators provide accurate temperature readings.

Low-cost protection . . . due to large, specialized production. Wide selection of dial ranges to meet specific requirements. Choice of stock types available as shown.

Send for new catalog, describing many thermometer styles.

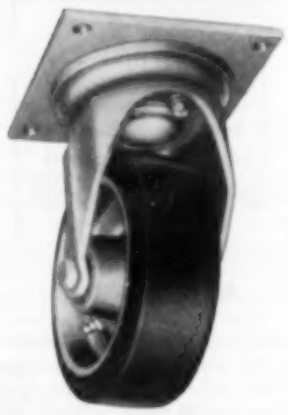
THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION
TOLEDO 1, OHIO
NEW YORK • CHICAGO • SARNIA, ONTARIO

MODEL "G" — Select the type that is best for your purpose. 3½" dial; evenly calibrated scales. From $18.



If you write maker identify as IEN - 3387

New *sealed* casters cut maintenance cost



Forget about caster lubrication — Bassick's new "3D" line virtually eliminates it with three outstanding design innovations:

Baffle ring on swivel bearing blocks dirt and water.

Grease retainer prevents loss of swivel lubrication.

Wheel bearing seal keeps dirt out, grease in.

"3D" sealed casters come in 5", 6" and 8" sizes, have fully case-hardened raceways, extra-strong king pin and double ball-bearing swivel. Write for catalog sheet 3D99-53. The Bassick Company, Bridgeport 2, Conn. *In Canada:* Belleville, Ont.

Bassick A DIVISION OF STEWART SW WARNER

MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

75 YEARS OF CASTER LEADERSHIP

If you write maker identify as IEN - 3388

It's used in advertising devices, aeroplanes, air brake equipment, alarm systems, armatures, lightning arresters, automobiles, bakery equipment, batteries, loose leaf binders, boats, bowling alleys, carburetors, card index equipment, circuit breakers, electric clocks, coils, commutators, computing machines, condensers, controllers, conveyors, counters, cranes, cut outs, electric heating equipment, electric lighting systems, electric railway cars, electric trucks, electric warning signals, electric washing machines, electric welding machines, elevators, fans, office furniture, fuses, gears and pinions, generators, hoists, knitting machinery, linotype machines, locomotives, mining machinery, motors, motion picture machines, printing presses, pumps, radio and television equipment, railway cars, refrigerator equipment, regulators, relays, rheostats, safety equipment, shoe lasts and counters, shuttles and spools, sporting goods, stage lighting equipment, starting and lighting equipment, switches, switchboards, telephone apparatus, textile machinery, toys, transformers, trunks, vacuum cleaners, X-ray apparatus—and many, many other applications.

what's *the* *material** *of a* *million* *uses?*

*

It's National Vulcanized Fibre—

A product your business can use to advantage. Write to Dept. G-3 for informative catalog.

NATIONAL VULCANIZED FIBRE CO.

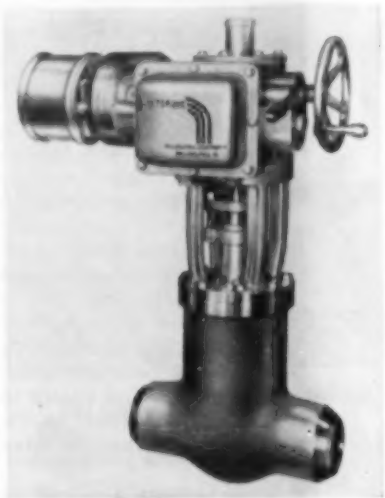
WILMINGTON 99, DELAWARE

FIRST—IN MAKING THE MOST OF LAMINATED PLASTICS

If you write maker identify as IEN - 3390

VALVES . . Power operator opens and closes valves to preset torque

Source: PHILADELPHIA GEAR WORKS INC.
Erie Ave. & G St., Dept. IEN, Philadelphia 34, Pa.



Bulletin "Limitorque" Type SMA

Type SMA is a new assembly in the company's Limitorque line of motor driven valve operators. It employs a two-piece stem nut that permits changing the unit from one valve to another. It can be supplied with torque control for one or both directions of stem travel. Five sizes in the line apply on valve stems maximum at 1¾ to 4½ in. in diameter. In each case the assembly includes a lever disengaging clutch to transfer the action to a hand wheel and to return it to the motor drive as soon as the disengaging lever is released by the operator.

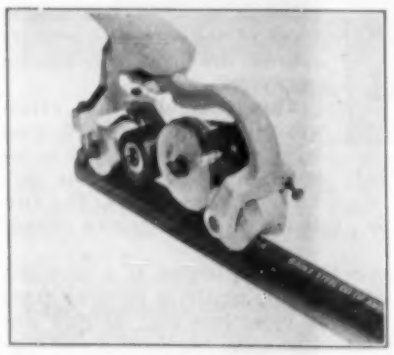
The motor drives a worm engaging a worm gear that applies on the stem nut. The worm is splined on its shaft and is backed by a spring against axial movement. Pressure build-up, as the valve seats and compresses this spring, moves the worm axially to actuate a switch that opens the motor circuit at a predetermined torque setting. This setting is adjustable after removing the housing cover. The compartment containing the adjustment also encloses the switch contacts and protects the control mechanism against contact with dirt or moisture.

The motor is available for ac. or dc. operation on standard voltage as specified. Assembly can be in any position. Operating parts are grease lubricated and sealed for life, including the motor bearings. The hand wheel is made of cast steel and operates with a "hammer blow" that assists in unseating a tightly closed valve.

If you write maker identify as IEN - 3391

MARKING . . Roll type printer for use on flat and formed surfaces

Source: JAS. H. MATTHEWS & CO.
3948 Forbes St., Dept. IEN, Pittsburgh 13, Pa.



Specified characters

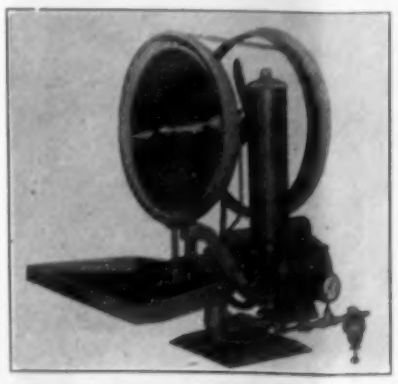
Trade names, codes, inspection marks can be rolled on flat, round, square or hexagon surfaces with this new No. 230 printer. Positioning rolls are employed at the front and rear. A rubber covered drive roll is mounted behind the front positioning roll. It provides traction for the printing roll to operate over the surface without drag.

The printing roll is fed by an ink fountain, filled by means of a spout can. It feeds by capillary action. The printing roll carries solid rubber dies for interchangeable rubber type with character size ranging from ⅛ to ¼ inch. The frame is made of aluminum. Weight is about 8 pounds.

If you write maker identify as IEN - 3392

HUMIDIFYING . . Motor driven unit delivers water vapor to air in a room

Source: SOUTHWORTH MACHINE CO.
35 Warren Ave., Dept. IEN, Portland 5, Maine



Bulletin "Humidifier"

A revolving disc and a propeller type fan are mounted on a common shaft in recently improved design of the company's humidifier. The shaft is belt connected to a driving motor mounted just above the base. The disc rotates inside a circular grid that breaks up water, delivered to it by the control element, into a fine vapor for delivery into the room in which the new humidifier has been installed.

The control is mounted inside a perforated cylinder. It is sufficiently sensitive to maintain relative humidity within 1 per cent of the point at which it is set. Controls are automatic. There are no parts that will rust or corrode. The disc and propeller shaft is mounted on ball bearings.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3393

To save money on crane runway maintenance

● This important booklet describes our three Special Crane Rail Sections, which were designed to give longer life under heavy wheel loads. And it shows a special technique of tight-joint-assembly which, when combined with a new conception of "floating rail" fastening, will result in fewer delays in crane operation and less costly crane and runway maintenance.

Don't delay, send for your copy today. Just write to United States Steel Corporation, Room 4291, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

USS SPECIAL CRANE RAIL SECTIONS USS

UNITED STATES STEEL

If you write maker identify as IEN - 3394

FOR JOB-FITTED SOLUTIONS TO YOUR TIRE PROBLEMS

See your Goodyear Dealer—distributor of America's most complete line of Industrials

SOLID FACT FOR SOLID USERS
Use Goodyear's Famous All-Weather Tread Industrial Solid (*illustrated above*) for top traction and high resistance to cutting and chipping—even on rubber-damaging wet surfaces.

Whatever your particular industrial tire problems might be—tread—chipping—oil damage—insufficient traction, cushioning or flotation—the man to see for a cost-cutting solution is your nearby Goodyear Dealer.

He is not only experienced in dealing with these problems, he's also equipped to job-fit your operation from the most complete line of Industrial Tires in America today.

You'll find your Goodyear Dealer has over 100 different solid tire sizes plus a complete line of pneumatics and semi-pneumatics—all compounded in either UNiversal chip-resistant or OR Neoprene oil-, acid-, and chip-resistant compounds. What's more, he will specify the most efficient tread—smooth, grooved, All Service or the famous All-Weather—for your plant's floor surfaces.

And thanks to convenient warehouse location around the country, your Goodyear Dealer can promise quick service on your order.

Why not call your Goodyear Dealer soon? Or write Goodyear, Industrial Tire Sales, Akron 16, Ohio.

Use the right tire for the right job—use

GOODYEAR

INDUSTRIAL TIRES

All-Weather, All Service—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

If you write maker identify as IEN - 3396

New

P&S

15 and 20 AMPERE SUPER SWITCHES

Designed for . . . Extra Long Life at Full Load . . . Maximum Service . . . Quiet Operation.

Available in Single Pole, Double Pole and Three-Way—with Brown or Ivory Handles

Rated: 15 Amp., 120 Volts A.C., 277 Volts A.C.

20 Amp., 120 Volts A.C., 277 Volts A.C.

May be used on Fluorescent (Inductive) Loads and Incandescent Lamp Loads up to full rated capacity—on Motor Loads up to 80% of current rating of switch.

Drop us a line on your letterhead for complete information

Address Dept. IN

PASS & SEYMOUR, Inc. • Syracuse 9, N. Y.

Offices: 71 Murray Street, New York 7, N. Y.
1229 W. Washington Blvd., Chicago 7, Ill.

If you write maker identify as IEN - 3397

LIFTS DIRT FROM FLOORS... HOLDS IT OFF...

CINDET

100% ACTIVE 100% SAFE!

NEW LIQUID SYNTHETIC DETERGENT

Whether your water supply is HARD or SOFT, cleaning with CINDET means *no curds, no dingy films!* CINDET is *surface-active* — it works on the principle of LIFTING floor dirt, grease and old water-emulsion wax from floors and HOLDING it in suspension in a fluffy mass of energetically-cleaning SUDS. *Dirt is not re-deposited* — rinses off easily.

Dilute a little CINDET in HARD or SOFT water . . . apply with clean mop . . . let foamy, clean-looking suds stand 5 or 10 minutes . . . scrub only if necessary, and rinse thoroughly. The result: AMAZINGLY BRIGHT, CLEAN FLOORING.

Safe for *all* flooring — and wonderful for removing stubborn rubber marks. Also excellent for walls, for shampooing rugs and upholstery, for washing dishes by hand.

DOLGE backs up CINDET with a complete-satisfaction-or-deal-is-off GUARANTEE! Write for literature; have your DOLGE SERVICE MAN demonstrate CINDET on your *dirtiest, greasiest* flooring.

THE SUDS DO THE WORK!

FOR FREE SANITARY SURVEY OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN

expendable DOLGE

WESTPORT, CONNECTICUT

If you write maker identify as IEN - 3398

MORE WORK *using* FEWER WORKERS *with*

DUO-FAST One-Hand AUTOMATIC TACKERS

You can do much more tacking in less time with these efficient Duo-Fast Tackers . . . You'll like the wide range of AIR TACKERS, GUN TACKERS and HAMMER TACKERS available. You get exactly the model you need . . . You'll like our money-saving FREE MAINTENANCE SERVICE. For the complete story, mail this coupon.

FASTENER CORP. 860 Fletcher St., Chicago 14, Ill.

FREE — TELL US MORE about Duo-Fast Tackers for — _____

Our Business is ____
Company Name ____
Address ____
City ____ State ____

If you write maker identify as IEN - 3399

SAWING . . Band saw machine drives blade made of high-speed steel

Source: DoALL COMPANY
254 N. Laurel Ave., Dept. IEN, Des Plaines, Ill.

Specifications upon request

Four sizes of machine, with 16, 26, 36 and 60-in. throat, have been developed to apply a variety of tooth designs and blade types in the company's new Demon high speed steel band blade. Demon Precision is available in three varieties of pitch and five widths from ¼ to 1 inch. The buttress type tooth, previously developed and known in this new blade as the Demon Buttress, is available in three pitches and in three widths from ½ to 1 inch.

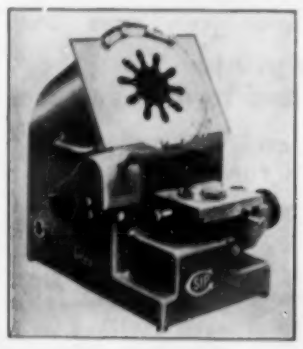
Red heat hardness of the band blade permits high cutting velocity which can be maintained in production applications with the aid of coolant equipment that is standard on the machine. This equipment is adjustable to produce either a flood, a mist or a jet on the blade and work. A typical range of variable speed provided by the machine is 40 to 10,000 fpm.

The assembly includes a Job Selector on which the operator dials to the material to be machined and reads the proper speed, pressure and cutting rate. Saw guide post adjustment, tool tensioning and table position for angular cuts are hydraulically actuated and adjusted from the control panel. Hydraulic pressure is employed also to apply brakes to stop the machine.

If you write maker identify as IEN - 3400

GAGE . . Optical projector for silhouette and surface inspection

Source: AMERICAN SIP CORP.
100 E. 42nd St., Dept. IEN, New York 17, N. Y.



For production use

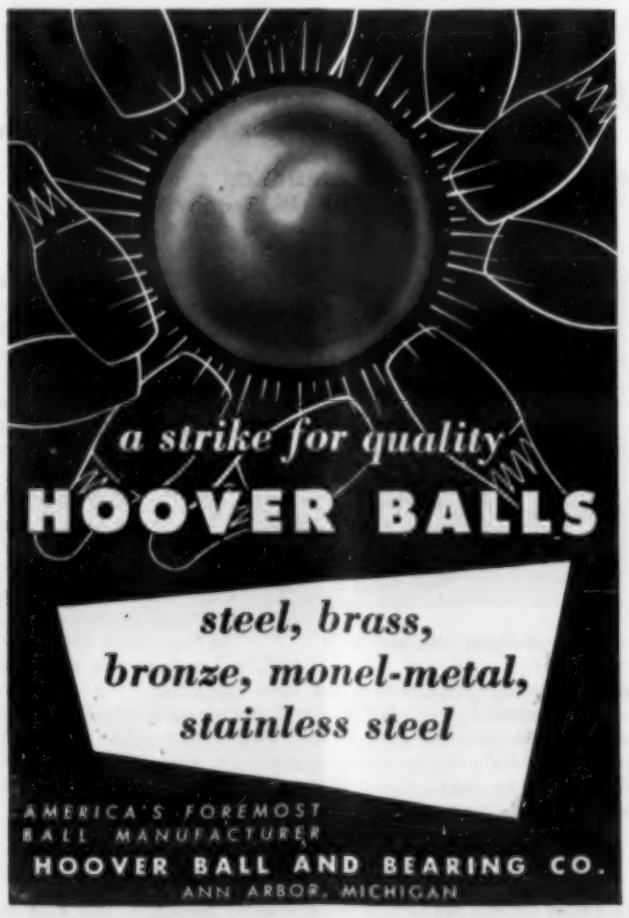
The screen on this new Type AP-17 optical projector measures 7⅞ in. in diameter. It can be rotated and is graduated for use in connection with a verier to permit angular readings to 5 min. of arc. A ground glass plate can be positioned in front of the screen to support master drawings for routine inspection.

Three magnification ratios are 10X, 20X and 50X. One light source is employed to inspect profile as well as surfaces of work pieces. The two types of inspection can be combined for simultaneous examination of the work.

The object table measures 5½ by 4¾ inches. It is provided with cross slides and carries, at the center, a circular glass stage 2⅜ in. in diameter. The objectives and mirrors are treated to produce clear bright images. Accessories are carried in a cabinet at one side. The projector can be moved without fear of damage.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

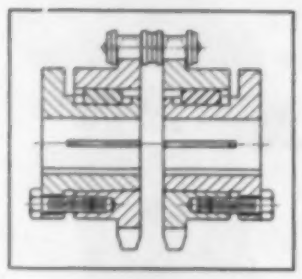
If you write maker identify as IEN - 3401



If you write maker identify as IEN - 3402

DRIVE . . Flexible shaft coupling, chain design, mounts tapered bushings

Source: BROWNING MFG. CO.
16 Chester St., Dept. IEN, Maysville, Ky.



Bulletin V169B

Malleable sprockets with hardened teeth and American Standard roller chain are employed in the construction of a new line of flexible shaft couplings in which the sprocket hubs are bored to take malleable split tapered bushings. Nine stock sizes, with the interchangeable bushings, cover 38 stock bores in an overall shaft range from ⅜ to 2 11/16 inches.

Overall diameter, with the chain in place, is 2¾ to about 6 inches. Overall length, including the heads of the fastenings that hold the bushings in place, is from 2¾ to 6¼ inches. List price is $12.30 to $40. Bushing prices are 90 cents to $2.40. The bushings can be removed and replaced quickly. They are held in place by three cap screws through their flanges.

If you write maker identify as IEN - 3403

PRINTING . . Sensitized paper for use in Dri-Stat photocopy machine

Source: PEERLESS PHOTO PRODUCTS INC.
Tesla Road, Dept. IEN, Shoreham, N. Y.

The operator need not hurry

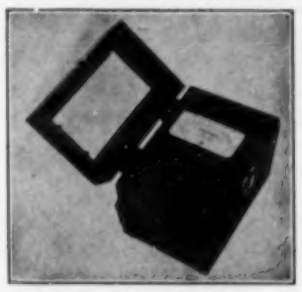
Dri-Stat No. 1, negative, is a new sensitized paper with which photocopies can be made under fluorescent or incandescent light of fairly high intensity as well as in subdued daylight. Results are sharp and clear. Pre-exposure is not a serious problem.

Dri-Stat No. 2, positive paper is available also in three different types, one for general office use, a second coated on both sides and a third that features light weight.

If you write maker identify as IEN - 3404

TESTING . . Resistance meter will test insulation to 500 volts dc.

Source: ASSOCIATED RESEARCH INC.
3762 W. Belmont Ave., Dept. IEN, Chicago 18, Ill.



Instructions provided

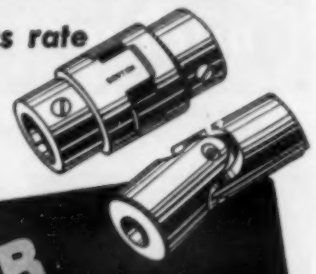
Model 266 is a new portable dry cell operated resistance measuring instrument in the company's Vibrotest line. It applies an essentially constant dc. test voltage independent of the ohm value being measured. Operation is based on a synchronous vibrator power supply with maximum output of 400 microamp. at 500 volts dc.

Two resistant ranges are from 1 to 100 and from 1 to 1,000 megohms. The steel housing is equipped with a hinged removable cover. It measures about 9 by 6 by 8 inches. Weight of the instrument is 18 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3405

How cost-wise buyers rate MACHINE DRIVE **COUPLINGS**



GOOD ✓ BETTER **BOSTON** *Gear*

Sleeve, Multi-jaw and FLEXIBLE COUPLINGS
UNIVERSAL JOINTS

IN STOCK AT 92 BOSTON Gear DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the Distributor nearest you.

Get this Catalog . . . lists 5112 standardized machine parts . . . your reliable "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write—Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as IEN - 3406

DISPENSING . . Antiseptic container for hand cream to prevent dermatitis

Source: WEST DISINFECTING CO.
42-16 West St., Dept. IEN, Long Island City 1, N. Y.

To protect workers

New dispenser takes a 12-oz. tube of antiseptic protective cream, manufactured by the company for dermatitis prevention. It provides an economical and sanitary means to dispense the cream and protects the antiseptic against contamination. Each stroke of the lever delivers a predetermined amount. The dispenser is intended for installation in wash rooms.

If you write maker identify as IEN - 3407

CONVEYING . . Rayon belt, 12 to 72 in. width, 4 to 10 plies

Source: UNITED STATES RUBBER CO.
1230 Sixth Ave., Dept. IEN, New York 20, N. Y.

Resists ripping and tearing

U. S. Matchless trade names a new conveyor belt in which rayon replaces cotton duck in both lengthwise and crosswise directions of the belt. The rayon makes the belt flexible and troughable to minimize spillage. It weighs considerably less than cotton without sacrifice in strength. It holds fasteners as well as duck belts. It can be repaired using the same techniques.

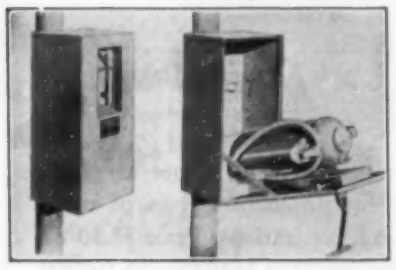
The new belt can be employed in most locations where duck belts are now used, particularly in coal mines, steel mills, cement plants and coal preparation plants. It rates 3500 to 4000 lb. per square inch cover tensile strength and 20 to 24-lb. friction between plies.

A companion belt, known as U. S. Giant rayon, rates 2,500 to 3,000 lb. per sq. in. and 16 to 19-lb. friction between plies.

If you write maker identify as IEN - 3408

EXTINGUISHING . . Hinged cabinet holds hand extinguisher ready to use

Source: EBERHARD MFG. CO.
2734 Tennyson Road, Dept. IEN, Cleveland 14, Ohio



Patented

Model 2030 is a new "all weather" fire extinguisher cabinet. It holds an extinguisher on its hinged door and is provided with a wire type seal handle to prevent theft and tampering. The cabinet is fitted with air vents and drain holes. It measures 13½ by 10½ by 26 in. and weighs 45 pounds. Pull on the handle unlocks and opens the unit to present the extinguisher ready for use.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3409

Speed up ▶RESEARCH ▶BUYING ▶PRODUCTION

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Eliminate Incomplete Small Catalogs and Loose Literature

UNITED CATALOG PUB., INC. 110 LAFAYETTE ST NEW YORK 13, N. Y.

If you write maker identify as IEN - 3410

DRILLING . . Upright machine mounts six station turret drill head

Source: HOWE & FANT INC.
531 Flaxhill Road, Dept. IEN, South Norwalk, Conn.

For production use

The company announces complete assembly of its turret head, previously described IEN-7283-51, and a new upright drilling machine with a 22 by 24-in. work table and a spindle feed movement of 6 inches. The machine provides variable speed drive between 200 and 4,000 rpm. in connection with its two speed 900/1800-rpm. motor. Drilling capacity is to ½ in. in steel. Floor space measures 34 by 50 inches. Height is 85 inches. Weight is about 1 ton.

The operator employs a capstan wheel to retract the drilling machine spindle and disengage the turret head spindles. Then he selects the desired turret spindle, positions it and advances the capstan wheel to align and lock the spindle into the machine. He then advances the tool to the predetermined depth where he reaches a positive stop.

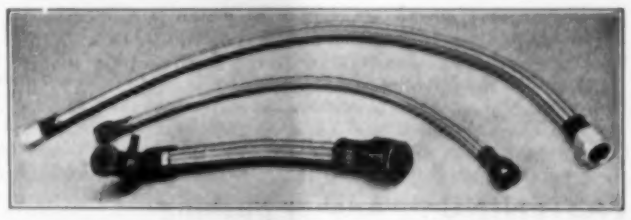
Speed for each spindle is selected by turning a screw. A tachometer on the machine shows the speed. A trip dog actuates a motor reversing mechanism when a spindle is to be employed for tapping. Then the spindle reverses at twice its forward speed, when maximum depth has been reached or when the capstan wheel movement has been reversed.

The machine will take work clearing a maximum of 30 in. between the spindle and table and requiring not more than 14½ in. between the work center and the machine column. List price is $2,950. Coolant equipment adds $175. Electric tapping accessories add $300.

If you write maker identify as IEN - 3411

HOSE . . Wire braided plastic for high pressure fluids to 450 deg. F.

Source: RESISTOFLEX CORPORATION
Dept. IEN, Belleville, N. J.



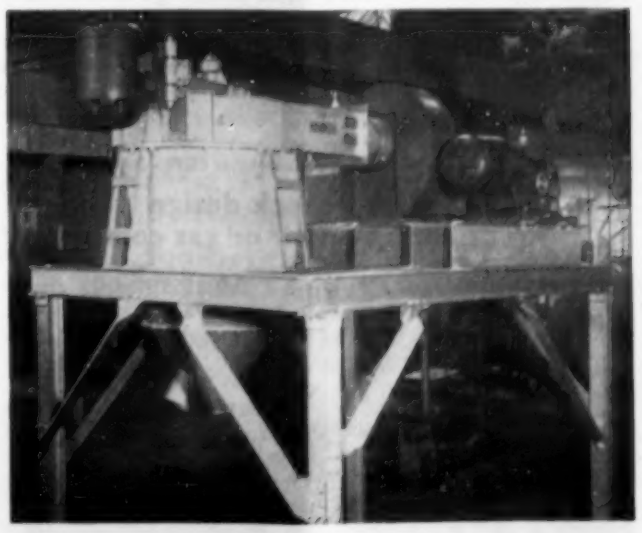
At present mostly for jet engines

Fluoroflex-T, a teflon compound, is employed in the extruded tube of this new R-500 hose. It is reinforced with stainless steel braid and is equipped with steel or stainless steel fittings in specified overall hose and fitting length. The fittings are swaged to the armor braid and to the tube to make a permanent fluid seal.

The hose is inert to attack by synthetic oils, fuels, alcohols, water, chemicals, corrosives. It retains its strength and flexibility in a temperature range from minus 100 to plus 450 deg. F. Its shelf life and operating life essentially unlimited. It absorbs vibration and resists failure due to fatigue. Sizes range from ¼ to 1 in. with working pressure to 1,000 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3412



New Type STURTEVANT Air Separator
Recovers Fines in Micron Ranges

Now the famous Sturtevant Whirlwind Air Separator, so widely used throughout industry for fast recovery of fines, has been specially designed to "pick-off" classified materials such as pigments, limestone fillers, plastics, oyster shells, etc., in micron sizes.

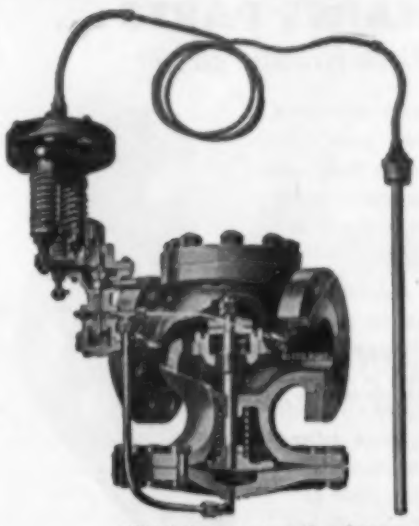
These highly efficient air separators select a continuously uniform product of desired fineness. Used in a closed circuit with grinding mills, they increase production, cut power costs.

Large feed opening, rugged construction, ease of adjustment, low power consumption assure economy of operation and minimum upkeep. Write for further information.

STURTEVANT MILL COMPANY
113 Clayton St., Boston 22, Mass.

If you write maker identify as IEN - 3413

LOW COST **Temperature Control**



ET150 Temperature Regulator

Tops in performance for both storage and instantaneous heaters, this pilot-operated Spence regulator offers these important advantages:

SECO Metal Seats and Discs — 20 years experience has failed to produce a single case where SECO Metal has been cut by steam.

Packless Construction — minimizes friction . . . eliminates much time-consuming maintenance.

Large Metal Diaphragm— under usual conditions never requires replacement.

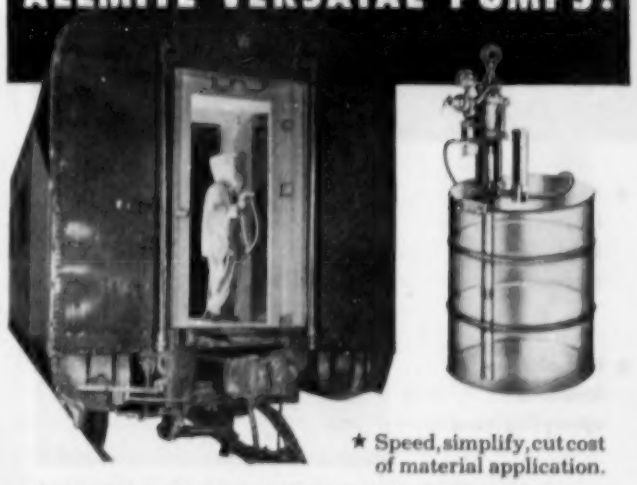
New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from ¼" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today.

SE-106

Spence
SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 3414

SPRAY SOUND INSULATION
DIRECT FROM ORIGINAL DRUMS WITH
ALEMITE VERSATAL PUMPS!



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★ Air-powered Versatal Pumps deliver materials direct from original 54-gallon drums.

★ Pump through long lines of hose or pipe.

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ALEMITE Versatal SPRAY PUMP EQUIPMENT

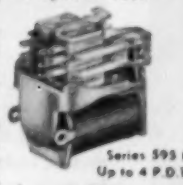
If you write maker identify as IEN - 3415

the switch is ON to **GUARDIAN** *Controls*

INCREASE POWER — SAVE WEIGHT — SAVE SPACE

INDUSTRIAL
Applications Include An Endless Variety of Special Uses

Guardian Relays are right in line to help design engineers conserve space, reduce weight and meet power requirements with plenty to spare. This is exemplified by Guardian's lightweight midget Communications Relays, Series 595-P, 595-H (Hermetically sealed in accordance with MIL-R-6106), and 695-P. Features: (1) new, improved *field piece* with enlarged end adjacent to armature retards magnetic reluctance; (2) *armature* pivots on a stainless steel *pin bearing* to minimize friction and utilize maximum power; (3) maximum electrical separation is obtained between left and right hand contact stacks by means of fiberglass barrier; (4) *magnetic circuit efficiency* assured by correct combination of winding to core size for sensitive or power types. Write for complete details now.



Series 595 P Up to 4 P.D.T.

Series 595 H Up to 4 P.D.T.

GUARDIAN ELECTRIC
1620-C W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN - 3416

nylon

MAINTENANCE PARTS . . .

FAST . . . without mold costs!

Now, when you need maintenance parts fast . . . and these parts call for the advantages of nylon (light weight, wear resistance, heat and corrosion resistance) — you can make them quickly, *with no mold cost!*

POLYPENCO nylon standard shapes are the answer. Ideal for gears, bushings, bearings, insulating shafts, washers, etc. Available in rod, strip, tubing. Easily fabricated on standard metal working tools. Quick delivery from stock. Write for bulletin, listing technical information or prices. The Polymer Corporation of Pennsylvania, Reading, Penna.

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If you write maker identify as IEN - 3417

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- to help you improve a spraying operation
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The most complete industrial spray nozzle catalog ever produced. Gives you reference data on thousands of standard and special spray nozzles for every type of spraying.

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SPRAYING SYSTEMS CO.
3208 Randolph St. Bellwood, Illinois

If you write maker identify as IEN - 3418

FACTS

ON THE FIRST SUCCESSFUL LIFT TRUCK WITH

Torque Converter

- Increases clutch life 6 to 10 times!
- Lengthens engine life up to 50%!
- Permits start and stop on 20% grade . . . under full load!
- Loads speedily "inched" into position — eliminates clutch riding!

Available on all BUDA 3,000 to 7,500 lb. models. Installation can be made in the field.

FREE BOOK
—gives complete information. Write today!

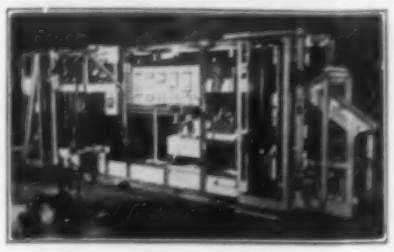
BUDA

THE BUDA COMPANY • HARVEY, ILLINOIS

If you write maker identify as IEN - 3419

FOUNDRIES . . Casting machine to pour metals and plastic materials

Source: FERGUSON EQUIPMENT CORP.
Penn Ave. & 21st St., Dept. IEN, Pittsburgh 22, Pa.



Built to order

Tray-Cast trade names a new machine that presents one or more pouring stations where molds are filled. It employs a pusher to move the bottom row of filled molds, or trays, to an elevator which moves them to an upper track. A second pusher moves them through a cooling chamber to an ejector station where the molds are emptied and returned by an elevator to the bottom or pouring position.

The machine is arranged so molds can be replaced and interchanged quickly. It can be employed to cast materials such as aluminum, brass, copper, lead. Capacities range from 1,000 to 10,000 lb. per hr. based on aluminum. Cycling is automatic.

If you write maker identify as IEN - 3420

DUST COLLECTING . . Portable bin receives dust from cyclone separator

Source: TORIT MFG. CO.
286 Walnut St., Dept. IEN, St. Paul 2, Minn.

Rolls dust away

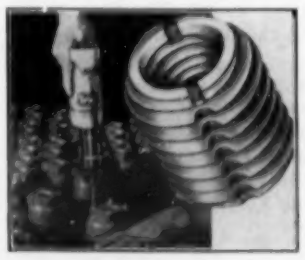
New assembly of the company's Model 219 Twin Cyclone dust separator is available to order with a leg mounted hopper bottom from which a rectangular clamping lid is suspended. The lid is connected to the hopper with a 12-in. air tight flexible sleeve. It applies on a caster equipped bin that can be removed, emptied and returned at intervals to dispose of or recover dust removed by the separator from an air stream to which it connects.

The bin holds 8 cu. ft. and is mounted on rubber tired casters. Two or more can be employed with the separator for installations where large volumes of dust are handled.

If you write maker identify as IEN - 3421

FASTENING . . Anchor bushing for soft metal, plastics or repair use

Source: ROYLYN INCORPORATED
1706 Standard Ave., Dept. IEN, Glendale 1, Calif.



Locks in place

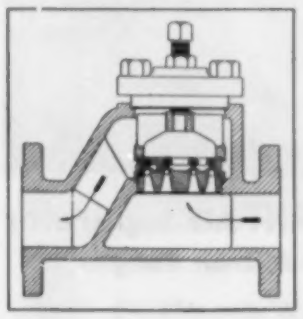
New design of the Weg insert anchor bushing, previously described IEN-1758-48, carries a slot at one end for screw driver application. It is designed for use in a threaded hole in which the threads have worn or stripped, or in soft metal or plastics in which a threaded opening is required. The unit is made of steel with anchor threads on the outside and connection threads on the inside as illustrated.

Grooves ground in the side provide anchorage against turning loose when the unit is cast in place in a molded plastic part. The slot design is available in sizes to ¼ inch. Overall size range is from ¼ to ⅛ in. in outside diameter and from No. 8 to ¾-in. internal thread.

If you write maker identify as IEN - 3422

VALVE . . Disc type check design for discharge on air or gas compressor

Source: PENNSYLVANIA PUMP & COMPRESSOR CO.
Bushkill Drive, Dept. IEN, Easton, Pa.



Bulletin 509-C

A careless start, against a closed discharge line, cannot harm a compressor when the manually operated line valve has been replaced with this new design in the company's Airchek line. The new valve has been added to the one, previously described IEN-7247-52, for pressures as high as 500 lb. per square inch.

It applies in the discharge line of air and gas compressors to prevent reverse flow and to present negligible resistance in forward movement of the compressed air or gas. The valve also breaks up delivery pulsation and practically eliminates discharge noise. Size and line pressure are to specification.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3423

D.C. SOLENOIDS *with* A N CONNECTOR

Synchro-Start MODEL SS-A Solenoid has been developed to meet the demands of many customers requiring a standard aircraft type fitting.

These ruggedly constructed solenoids are available for use on 6, 12, 24 and 32 volt systems. They have a 10 lb. pull over ½ inch stroke and power consumption is 220 Watts pulling and 6.5 Watts continuous.

Further information upon request.

SYNCHRO-START PRODUCTS
INCORPORATED
8151 N. RIDGEWAY AVE. • SKOKIE, ILL.

If you write maker identify as IEN - 3424

CARBOMANT DRESSING STONE

The CARBOMANT dressing stone is the newest aid for the tool and die maker and for all modern machine shops. It fills the need for an "on the job" touch-up of all carbide tools and cutters in prevalent use. The CARBOMANT is also useful for sharpening, re-setting and refinishing all hardened cutters and punches without dismantling and re-assembly of machinery

It is adaptable for use in hard to get at places and will definitely cut production costs of many difficult manufacturing operations. Price $8.50 ea. Circular showing size and grits available on request

Distributed in the U.S.A. by:

PFINGST & COMPANY, INC.
62 Cooper Square • New York 3, N. Y.

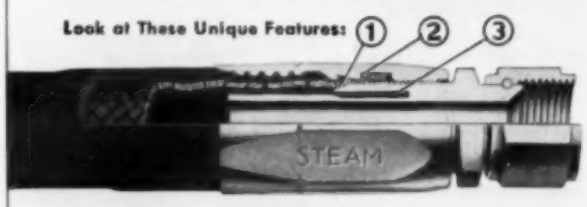
If you write maker identify as IEN - 3425

Aeroquip

REG. TRADE MARK

"little gem" FITTINGS MAKE STEAM HOSE LINES LAST LONGER

Look at These Unique Features: ① ② ③



Reusable *"little gem"* fittings assure positive attachment without harmful compression of hose inner tube. They never need tightening or adjusting after assembly. *"little gem"* fittings and Aeroquip burst-proof steam hose are matched for guaranteed performance. Write for complete information.

① Knife-like spur separates inner tube from wire braid.

② Clamping action is exerted on reinforcing wire braid only.

③ Lip seal is formed by end of inner tube in annular chamber.

"little gem" is an Aeroquip Trade Mark

AEROQUIP CORPORATION, JACKSON, MICHIGAN

FLEXIBLE HOSE LINES • DETACHABLE, REUSABLE FITTINGS • SELF-SEALING COUPLINGS • BREAKAWAY COUPLINGS • HYDRAULISCOPE
AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

If you write maker identify as IEN - 3426

ARMSTRONG

SET-UP *and* HOLD-DOWN TOOLS

ARMSTRONG Set-up and Hold-down Tools reduce setting-up time—keep men and machines producing. Designed for use on planers, drill presses, milling machines, etc., they hold work securely and rigidly, and thereby reduce spoilage and prevent costly accidents.

Your local Armstrong Distributor carries ARMSTRONG Set-up and Hold-down tools in stock in sizes for every operation. Stop haphazard setting-up methods. Provide each of your machines with a full complement of ARMSTRONG Set-up and Hold-down Tools.

Write for circular

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
5243 W. Armstrong Ave. • Chicago 30, U. S. A.

If you write maker identify as IEN - 3427

Variable Speed Drive is only one of the reasons for acclaiming this 16" LIGHT-HEAVYWEIGHT the most versatile, cost-cutting machine in its class

. . . with it, you simply "dial" the exact speed for any job while the machine is running — 50 to 450 SFM in the low range, and 500 to 4500 SFM in the high range.

In addition, you get LIGHT-HEAVYWEIGHT quality — plus precision sealed ball bearings — new and improved guides adjustable to all blade widths — balanced wheels with Carter Jiffy Tires for convenience and economy. It all adds up to a sturdy, practical, accurate machine to effectively bridge the gap between the inadequate hobby-type tool and the higher-priced heavy machine tool.

Right in your area — and as close as your telephone — is our Distributor. An expert on the industrial equipment you need, he's best equipped to give you *all* the facts, including A to Z information on our LIGHT-HEAVYWEIGHTS. Why not call him — today!

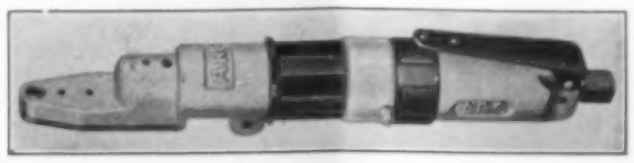
WALKER-TURNER
• DIVISION •
KEARNEY AND TRECKER CORPORATION
PLAINFIELD N. J.

DRILL PRESSES — Hand and Power Feed • RADIAL DRILLS
Wood and Metal Cutting BAND SAWS • TILTING ARBOR SAWS
RADIAL SAWS • JIG SAWS • LATHES • SPINDLE SHAPERS • JOINTERS
BELT AND DISC SURFACERS • FLEXIBLE SHAFT MACHINES

If you write maker identify as IEN - 3429

DRILLING . . Pneumatic tool for close quarter right angle work

Source: ARO EQUIPMENT CORP.
109 Madison St., Dept. IEN, Bryan, Ohio



For production and maintenance uses

Small holes can be drilled in close quarters at right angles with the axis of the drilling tool in this new Model-7438 Flat Angle drill. The spindle takes threaded drill bits. Small external collets are available for numbered drill sizes up to ¼ inch. Adaptors can be supplied to use broken drill bits. Four models provide speeds from 1,450 to 4,000 rpm. in free operation. The tool has a $\frac{5}{16}$-in. spindle off-set, overall length of about 10¼ inches. Head height is a little under $\frac{11}{16}$ inch.

A characteristic in the construction is the use of Ductile cast iron which compares with malleable iron and the use of a heat treated alloy steel cover plate made of graphite bearing steel. Gears in the angle head are mounted on needle bearings. Grease fittings are provided. Speed is controlled by a built-in regulator.

If you write maker identify as IEN - 3430

SEALING . . Self-adhesive tape combines Teflon and silicone adhesive

Source: CONNECTICUT HARD RUBBER CO.
407 East St., Dept. IEN, New Haven 9, Conn.

Technical data upon request

Cohrlastic Temp-R-Tape T is a new self-adhesive tape composed of a base of Teflon and a silicone polymer adhesive. The tape will seal high temperature and chemical ducts, serve as a masking tape at high or low temperature, as an electrical insulating tape. Due to the non-adhesive characteristics of the Teflon, it can be used on packaging machinery to provide a non-sticking surface.

Self-adhesive characteristics are maintained in a temperature range between minus 80 and plus 400 deg. F. The tape can be applied at room temperature or down to minus 65 deg. F. without loss of adhesive properties.

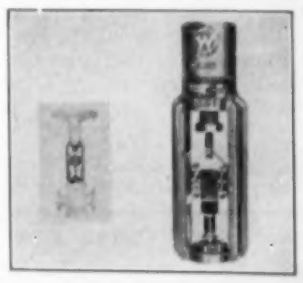
Dielectric strength is to 900 volts per mil. Tensile strength is 1,000 lb. per sq. in., based on the backing material which measures 0.003 in. in thickness. Overall thickness is 0.01 inch. Application can be made on materials such as aluminum, brass, copper, glass, phenolics, steel. Width ranges from ½ to 12 inches. The material is supplied in rolls 36 yd. in length.

A similar material employs Kel-F in place of the Teflon to produce similar characteristics.

If you write maker identify as IEN - 3431

VALVE . . Diaphragm operated, employs gear connection to valve stem

Source: NATURAL GAS EQUIPMENT CO.
190 E. Glenarm St., Dept. IEN, Pasadena 2, Calif.



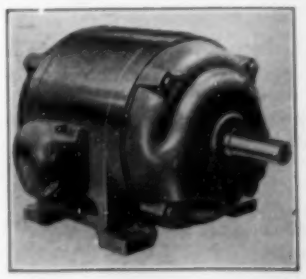
Bulletin MS-53-5

Movement ratio of 2 to 1, between the diaphragm stem and the valve stem in the Type NGE Wilgus regulating valve, is provided by a new Magna-Stroke gear mechanism as shown in the illustration. For each increment of movement of the diaphragm, the valve stem is moved two increments. Idler gears, secured in a frame that is attached to the diaphragm stem, ride stationary racks on the two sides of the mechanism and engage rack teeth on the valve stem. The net result is increase in sensitiveness in the main valve for improved flow control.

If you write maker identify as IEN - 3432

MOTOR . . Squirrel cage induction in new NEMA frame sizes 182 to 184

Source: U. S. ELECTRICAL MOTORS INC.
Box 2058, Dept. IEN, Los Angeles 54, Calif.



Details on request

Uniclosed Type H is a new drip proof, splash proof motor with a pre-wound stator in a one piece cast iron frame. Air intakes are built into the end brackets to prevent entrance of water and permit air flow into the motor. Baffles, inside the air entrances, prevent water from entering and coming in contact with the windings. New slot design, asbestos protected windings reinforced with Mylar laminations, split dome cast iron terminal box, stainless steel data plate, air impeller blades on the rotor ends and the company's Lubriflush lubrication for the bearings characterize the new construction.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3433

NEW SELF-ADJUSTING BLOW RINGS

Patented By DAY and HERSEY

FOR MORE EFFICIENT DUST FILTERING

DAY "AC" Dust Filters are now better than ever with Self-Adjusting Blow Rings compensating for even the slightest variation in the filter tubes due to changes in pressures, temperatures, moisture conditions, etc. This improvement to a widely acclaimed dust filter assures you added efficiency and economy in controlling dust.

DAY SINCE 1881
DUST CONTROL
A SINGLE UNIT OF A COMPLETE SYSTEM

WRITE toDAY FOR BULLETIN (528-R)
It contains new information on dust control.

The **DAY** *Company*
813 3rd Ave. N. E.
MINNEAPOLIS 13, MINN.
IN CANADA: P.O. Box 707, Ft. William, Ont. Branch Plants in Buffalo, Ft. Worth and Welland, Ont.

If you write maker identify as IEN - 3434

hydraulic gauges

that laugh at shock and overload

The direct action principle of operation makes these **Schrader Hydraulic Gauges** reliable indicators of pressure, even under shock and overload.

Easily installed, they are also easy to maintain.

The Schrader catalog describes the full line of Schrader Hydraulic Pressure Gauges, as well as Schrader air line equipment. A copy is yours for the asking. Write for it today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-31, Brooklyn 38, N. Y.

If you write maker identify as IEN - 3435

TIPS ON SELECTING

SEAMLESS MECHANICAL TUBING

Hot-Finished

Cold-Drawn

Roto-Rocked

Factual bulletin helps you choose the correct tubing for your particular application. Write today for Bulletin TB-340.

TA-4029(LM)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as IEN - 3436

ALLIED world's largest distributor of ELECTRON TUBES FOR INDUSTRY

IMMEDIATE DELIVERY FROM STOCK

ALL BRANDS IN STOCK
AMPEREX • G.E.
EIMAC • RCA
RAYTHEON
SYLVANIA
TAYLOR • TUNGSOL
VICTOREEN
WESTINGHOUSE
and others

ALLIED stocks for *quick shipment* the world's largest distributor inventory of special-purpose electron tubes. We specialize in supplying the needs of industrial, broadcast, governmental and other users. To save time, effort and money—phone, wire or write to ALLIED for fast shipment.

ALL TYPES IN STOCK
Power Tubes
Rectifiers • Phototubes
Radiation
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Oscillograph
Transistors
Ignitrons • Thyratrons
Image Orthicon
Klystron
All Special Purpose Tubes

Refer to your ALLIED Catalog for all electronic supplies. Write today for a FREE copy of the complete 268-page 1954 ALLIED Electronic Supply Guide.

ALLIED RADIO
100 N. Western Ave.
Dept. 14-C-4, Chicago 80, Ill.

Everything in Electronics from One Dependable Source

If you write maker identify as IEN - 3437

IT'S NEW! It's Powerful! It's Low Priced!

STONE Model M-35
12" Cut-Off Machine
For Ferrous and Non-Ferrous Metals

CAPACITY
Ferrous—1½" solids, 2½" O.D. pipe, 2½" structurals
Non-ferrous—2½" solids, 3" tubing and extrusions

We are proud to present the newest member of our superior line of high speed cut-off machines. The M-35 has a full 3½ h.p. geared-in-head motor. The direct drive insures delivery of full power to the cutting edge. Result — faster cutting (3 seconds per square inch of metal) and greater wheel life.

PRICE
Completely Equipped Ready for Cutting
$445
F.O.B. Syracuse, N. Y.

MODEL SS-20
Operates on guided rails for cutting larger structural steel, plate, sheets, with cuts up to nine feet in length. Cuts wet or dry.

MODEL M-75
Full 7½ h.p. geared-in-head motor. Will cut all ferrous and non-ferrous solids up to 2½", pipe and structurals up to 4". Can be equipped for wet cutting.

STONE ABRASIVE WHEELS
Cut 25% faster — average cutting time is 3 seconds per square inch of metal. Increased wheel life up to 25%. Write for prices.

For complete information write to
STONE MACHINERY CO., INC.
Fayette St. Manlius, N. Y.

If you write maker identify as IEN - 3438

Better Welds cost less with RAYTHEON WELDPOWER®

120 welds in this ½" long bridge structure for radio tube. Molybdenum wires, nickel rim supports, molybdenum center wire.

Production goes up as rejects go down with Raytheon Weldpower Units on the job. By producing cleaner, stronger, more accurate welds in less time, Weldpower Units quickly pay for themselves in a better product at less cost. Let us show you how Weldpower can save you money in welding small precision parts.

Retaining ring in ball bearing assembly (SAE 1020 steel).

Send samples or write for complete information. Address Dept. 6201N-3.

RAYTHEON
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago
New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 19 RECTOR STREET, NEW YORK CITY

If you write maker identify as IEN - 3439

PLASTIC MOLDING . . Vacuum machine to form thermoplastic sheet materials

Source: PAMCO INDUSTRIES, INC.
290 Broadway, Dept. IEN, Huntington Station, N. Y.

Self contained assembly

Thermoplastic sheets, to ¼ in. in thickness and to 27 by 57 in. in greatest width and length, can be vacuum formed in male or female dies on this new Model HV-30-60 machine. Maximum depth of draw is 18 inches. Assembly weight is 3,000 pounds. Other machines are available to order for specified duty.

Chromalox strip heaters, in three banks, provide the source for softening heat to 1,150 deg. F. A pump, driven by a 1-hp. motor, supplies hydraulic clamping pressure. A vacuum pump provides suction, through openings in the bottom platen, to draw the sheet down into or over the die after the sheet has been heat softened. Timers are employed for automatic sequence operation for the heater carriage, the clamp and the vacuum valve. Temperature is controlled by a West pyrometer.

If you write maker identify as IEN - 3440

GAGE . . Recording comparator to check small gears against a master

Source: ILLINOIS TOOL WORKS
2501 N. Keeler Ave., Dept. IEN, Chicago 39, Ill.

Specifications on request

Comparison record showing the variations between a master gear and a production gear is traced on a strip chart by this new Analytical Comparator. The machine provides a table motion parallel to the axis of the gear to check leads, a perpendicular motion to check involute or tooth profile and an in-and-out motion of the indicator slide to check spacing. The machine is intended for use by both large and small volume gear manufacturers.

If you write maker identify as IEN - 3441

Copper plating is now standard finish on all gears up to 30 in. in diameter manufactured by Brad Foote Gear Works, Dept. IEN, Cicero 50, Ill. The plating prevents corrosion, takes the place of grensing for this purpose, assists in smooth run-in when the gear is put into service. Gears over 30 in. are protected with copper colored water soluble paint that does not require removal prior to placing the gear in service.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3442

Electrically-Controlled Super Speed AIR CYLINDER

Six to ten times faster than conventional air cylinders, the Bellows Super-Speed Air Motor develops tremendous speed and power from normal air pressure. At 100 lbs. air, power is great enough to punch ½" dia. hole through 1/16" thick mild steel. Ideal for staking, riveting, forming, swedging, stamping or punching.

The Super-Speed Air Motor is a complete power unit with built-in low voltage Electroaire directional valve and speed regulators. (Also available with manually controlled valve.) Only one air connection needed.

Write for Bulletin 1163 today.
Address: Dept. IEN 354.
The Bellows Co., Akron 9, Ohio.

2½" BORE
•
Stroke Lengths
2½", 4", 6", 9", 12"
•
Seven Mounting Styles

The Bellows Co.
Akron 9, Ohio

If you write maker identify as IEN - 3443

VOLTS and AMPS at a glance with the COLUMBIA

NEW LOW PRICE!

$57.50 with Voltage Leads and Carrying Case

A. C. TONG TYPE VOLT-AMMETER
• Quickly • Accurately • Safely

Columbia Type AC-1 provides ampere readings with a snap by merely clamping jaws around the electrical conductor, without breaking circuit or insulation. Voltage readings are taken quickly and easily with safety plug-in leads. This instrument is one of the Columbia line of tong type instruments of the highest quality and dependability.

TYPE AC-1 FEATURES
- Measures up to 600 Amperes and 600 Volts.
- Amperes: 0/12/60/120/-600 A.C.
- Volts: 0/150/600 A.C.
- Convenient Range Switch.
- Insulated Jaws will accommodate Conductors up to 1½" diameter, Bus Bars up to 2" x ½".
- Accuracy: 3% full scale.
- Light Weight—Fits Easily into Pocket.
- High Quality at Low Cost.

Inquiries Invited from Distributors • Write for Descriptive Bulletin AC-19

COLUMBIA ELECTRIC MFG. CO. 4519 Hamilton Ave. Cleveland 14, Ohio

If you write maker identify as IEN - 3444

to maintain correct pumping rates for accurate metering and proportioning %Proportioneer% Adjust-o-Feeders use

WINSMITH SPEED REDUCERS

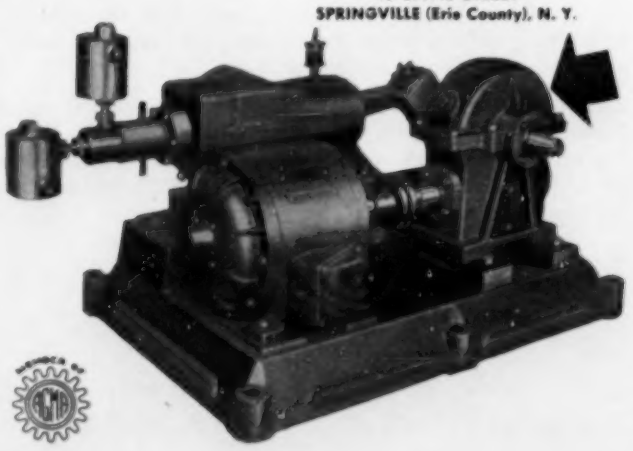
Metering and proportioning the flow of abrasive slurries, corrosive chemicals, viscous or semi-viscous fluids and many other chemicals, %Proportioneer% Adjust-o-Feeders are called upon to deliver precise, pre-set dosages. And they do! They're equipped for accurate, continuous and dependable service.

A fully enclosed Winsmith Speed Reducer with specially designed gears for reciprocating pump service, provides the required reduction ratio. *Precise speeds are assured!*

Among the reasons for using Winsmith Reducers, %Proportioneers, Inc.% emphasizes " . . . the very complete cooperation received in working out individual problems".

And who is in a better position to be helpful than a Winsmith representative? With rugged, compact and fully standardized units available in differential, worm and helical gear designs, the Winsmith line is the most complete within its range of 1/100 to 85 hp in ratios of 1.1:1 to 50,000 to 1. Request catalog 148 for details.

WINSMITH, INC.
10 DAVIS STREET
SPRINGVILLE (Erie County), N. Y.



If you write maker identify as IEN - 3446

GRC offers quick service, low cost on strong, good-looking wing nuts of rust-proof zinc alloy. All commercial finishes, all popular thread sizes. Wing nuts with special threads or untapped wing nuts also available. Inquiries invited for special wing nut designs.

Write today for samples and prices

IMMEDIATE DELIVERIES IN ANY QUANTITY

World's Foremost Producer of Small Die Castings

GRIES REPRODUCER CORP.

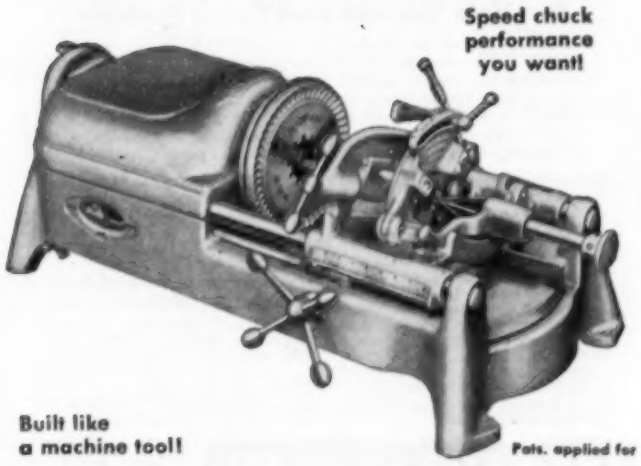
139 Beechwood Avenue • New Rochelle, N. Y.
Telephone: NEw Rochelle 3-8600

If you write maker identify as IEN - 3447

Now!...New 500A RIDGID

Pipe & Bolt Threading Machine with New Speed-Grip Chuck

Speed chuck performance you want!



Built like a machine tool!

Pats. applied for

Entirely new principle of gripping pipe or rod

Not just another hammer chuck

★ Speed-Grip Chuck guaranteed to hold any kind of pipe securely both ways, *forward and reverse.*

★ No slipping, even in driving geared tools.

★ Easy to operate: close grip-tooth jaws on work with hand wheel, sock it lightly—motor action makes it hold still tighter.

★ Releases easily by turn of hand wheel.

New "500" threads, cuts, reams with top work-saving ease—ready in seconds to work any kind or size of pipe, ⅛" to 2", bolts ¼" to 2". Power for geared tools to 12". Independent operation of tools. Quick-opening die heads—quickest possible set-up. With new Speed-Grip Chuck, No. 500A; **with lathe-type wrench chuck, No. 500.** Conduit and special dies on request. See it at your Supply House!

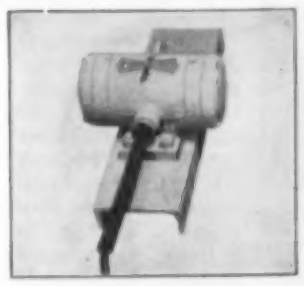
THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID
Work-Saver Pipe Tools

If you write maker identify as IEN - 3449

VIBRATING . . Motor-drive unit to move, settle and compact materials

Source: CLEVELAND VIBRATOR CO.
2828 Clinton Ave., Dept. IEN, Cleveland 13, Ohio



For stubborn materials

Model RC is a new vibrator assembly in which a three phase ac. motor, operating on specified input from 110 to 550-volt 60-cycle ac., drives a shaft and eccentrically mounted weights. The complete unit is mounted on a solid base or fits into a bracket to provide 3,600 impulses per minute.

Three sizes rate equivalent impact force at 400, 700 and 1,440 pounds. The assemblies weigh 60, 74 and 160 lb. including the vibrator, its circuit breaker and a mounting base. Base length is 18 and 24 inches. Housing length is 10½ to 12 inches. Overall height is about 8¼ to 11¼ inches. List price without the base is $229.50 to $396.50. The base adds $6.50 to $24.50.

If you write maker identify as IEN - 3450

WHEEL . . Molded plastic, noiseless, spark proof, absorbs shock

Source: HAMILTON CASTER & MFG. CO.
1700 Dixie Highway, Dept. IEN, Hamilton, Ohio

For truck use

Sizes range from 4 to 12 in. for this new molded plastic truck wheel. Standard equipment includes roller bearings and a Zerk lubricant fitting. The wheel is structurally equal to semi-steel with load capacity rated at 1 ton.

If you write maker identify as IEN - 3451

ISOLATING . . Vibration insulator cushions machine on a factory floor

Source: FELTERS COMPANY
210 South St., Dept. IEN, Boston 11, Mass.

Based on felt

Unisorb Type T is a new felt pad measuring ⅜ in. in thickness and able to carry a load of 75 to 125 lb. per square inch. The material is resistant to attack by oils and greases, mild acids and moisture. It is firm and dense in its structure and is particularly suited for use under machines such as lathes, grinders, milling machines, planers, jig borers. It can be employed in connection with steel plates and leveling screws as shown in the illustration.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3452

Immediate Delivery

Buy Direct from the Manufacturer and Save

Francis EST. 1880. **FACTORY-MILL & WAREHOUSE TRUCKS**

Cutting Handling Costs since 1880

WRITE *TODAY for catalog and prices*

3000-lb capacity

Complete Line — For every use. Standard sizes 27" x 48" and 30" x 54" in stock ready for immediate shipment.

Need more good trucks quick? Buy direct from the manufacturer and save —time AND money. Francis heavy duty, economical trucks feature strong iron work —hardwood frame—rigid construction. All carefully machine fitted. Steel rims or rubber tires.

Manufactured by
HOOSIER FENCE CO. Inc.
Dept. IEN 1701 E. 38th St., Indianapolis, Ind

If you write maker identify as IEN - 3453

IS YOUR WASHROOM MODERN AND SANITARY LIKE THIS?

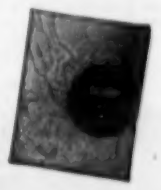
● Modern, sanitary Bradley Washfountains improve industrial relations and provide exceptional economies as well. They cut water consumption, maintenance and reduce piping connections by 80%.

Bradleys serve 8-10 persons simultaneously. Foot-control eliminates contagious washbasin contacts. Self-flushing bowl prevents collection of dirty water. Automatic water cut-off prevents water waste. BRADLEY WASHFOUNTAIN CO., 2219W. Michigan St., Milwaukee 1, Wis.

BRADLEY washfountains

Distributed Through Plumbing Wholesalers

Illustrated 24-page Catalog 5204 gives full information. Write for your copy now.



If you write maker identify as IEN - 3454

Commander

SELECT A SPINDLE

DUAL SPEED DRILL PRESS TURRET

DRILLS, REAMS, TAPS ON 1 DRILL PRESS SPINDLE!

- **Fits Any Drill Press**
- **Increases Production**
- **Reduces machine, fixture costs**

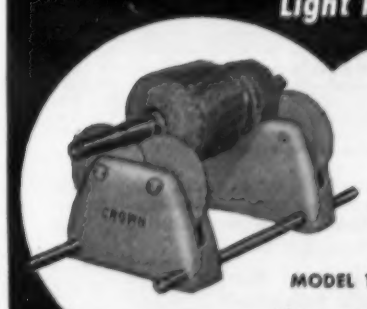
Commander Select-A-Spindle permits you to do 3 operations on a single drill press spindle . . . save time . . . eliminate multiple handling of piece parts, speed production and reduce overall costs. Dual Speed Select-A-Spindle permits selection of proper speed for each operation. Quick, positive hand indexing positions each tool accurately for sequence operations. Select-A-Spindle is built to tap with any 1, 2 or all 3 spindles to the full capacity of the unit. Adjustable torque control spindles for protection of taps to ¼" available.

See Us at Booth No. 823, ASTE Show, Philadelphia, Pa.

Commander MFG. CO.
4219 W. KINZIE STREET, CHICAGO
PRODUCT OF COMMANDER . . . BUILDER OF PRODUCTION TOOLS

If you write maker identify as IEN - 3455

Now faster, more accurate balancing of **ARMATURES—FANS—** *Light Revolving Parts*



the New **CROWN** *Supersensitive* **BALANCING WAYS**

MODEL 1105

Show up instantly the slightest imbalance in the smallest armatures. Supersensitive, pivot-type bearings and four free-turning discs practically eliminate friction drag. No set up or leveling. Portable. Loads up to 35 lbs. and 10" swing.

- **SENSITIVE** to .006 oz.-in.
- **ENDS . . . Slow Trial and Error**
- **NO CENTERING NEEDED**

$48.00 F.O.B. Woodstock, Ill.
State or local sales tax extra

USE THIS HANDY COUPON

CROWN INDUSTRIAL PRODUCTS CO.
715 Amsterdam Street, Woodstock, Illinois
☐ Please ship _____ CROWN Balancing Ways, Model 1105 @ $48.00, F.O.B., Woodstock, Illinois.
☐ Please send catalog data only, now.
Name _____
Company _____
Our Purchase Order No. _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 3456

If you write maker identify as IEN - 3457

Exposed flammables are a constant, potential hazard. They are extremely volatile and give off vapors which are readily ignited by a chance spark. Insurance companies insist the flammable liquids in plant use be contained in Approved Safety Cans.

APPROVED

APPROVED

APPROVED

APPROVED

SAFETY CANS by Underwriters' Laboratories and Associated Factory Mutual Fire Insurance Cos. Laboratories.

Pressure Relief. Spring-loaded cap is mounted on a ball and socket joint to automatically make a tight complete closure. This prevents loss by evaporation and leakage when can is inverted. Squeeze-grip handle is wide, comfortable; opens spout when held for pouring; gives complete control without strain or effort.

Fire Preventive Baffle located inside base of spout. Fire baffle is a double concentric, perforated metal cylinder which quenches flame and prevents it from igniting contents.

Sturdy, electrically seam welded body reinforced by beading. Designed with broad, substantial, even base that guards against accidental tipping. Should can tip, however, no leakage can occur because of tight closure.

DEMAND THESE FEATURES for complete plant and worker protection. No "Safety" Can is really safe without all these fire protective safeguards. Not one can be eliminated without endangering lives and property.

A complete Line of Plant Fire Protective Flammable Safeguards

Protectoseal designs and builds fire protective units for every place where flammables are stored and used—for production processes, storage, transfer and general plant use. Write today for Catalogs, Price List and detailed information.

Write today for Catalogs, Price List and detailed information.

In Canada: Safety Supply Co.

Fill in Coupon and Attach to Company Letterhead

The Protectoseal Company
1934 S. Western Avenue, Chicago 8, Illinois

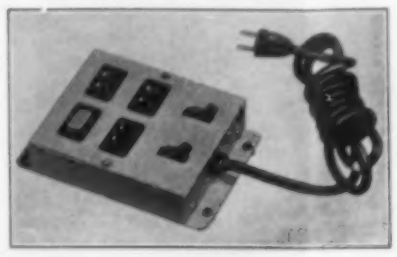
Send us the informative literature checked below:
☐ General Plant and Laboratory Container Catalog
☐ Catalog of Vents and Fittings for Bulk Storage
☐ Self-Checking Charts for Flammables

Name_____ Title_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 3459

CONNECTOR . . Multiple outlet box with extension cord and two switches

Source: FOSTORIA PRESSED STEEL CORP.
Dept. IEN, Fostoria, Ohio



Lists at $8.30

Three tools or appliances can be plugged into a single electric outlet with the aid of this new outlet box. The unit is wired with three outlets, one hot and two controlled by toggle switches. Each rates 10 amp. on 110-volt ac. or dc. A red signal light illuminates when the 6-ft. extension cord is plugged in. Assembly is in a rectangular 18-gage steel housing.

If you write maker identify as IEN - 3460

MOTOR . . Induction design in new NEMA frames 182 and 184

Source: STERLING ELECTRIC MOTORS INC.
5401 Telegraph Rd., Dept. IEN, Los Angeles 22, Calif.

Specifications upon request

The company announces availability of its new Klosd line of normal speed electric motors in the new NEMA frame sizes 182 and 184. Features include small size and compact construction, diagonal cover type terminal boxes that can be rotated 360 deg. and fixed in any desired position with reference to the threaded conduit opening.

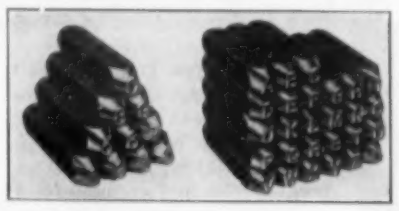
Moisture resistant labyrinth seal is employed on the pulley end to protect the open design as well as the fan cooled design. A plug seals the short end bearing. New brackets add protection to the windings and new insulation builds electrical and mechanical strength into the stator windings.

The windings are protected with a heat resistant baked varnish and a moisture resistant sealer. Current models in the older NEMA frame sizes will continue available during the conversion interval.

If you write maker identify as IEN - 3461

MARKING . . Steel stamps, flat face characters for forging dies

Source: M. E. CUNNINGHAM COMPANY
1039 Chateau St., Dept. IEN, Pittsburgh 33, Pa.



Boxed in sets

Forging dies marked with these new Style-FR stamps produce finished forgings with raised characters carrying 45-deg. rounded beveled sides. Metal will not lock in the markings to produce a defective work piece. The stamps are made of the company's Mecco safety steel that will not mushroom or spall in service. Characters range from 1/16 to 1/2 in. standard. Other sizes are made to order.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3462

A PAID NEWS ADVERTISEMENT BY THE SCHATZ MFG. CO.

Unground Flanged Ball Bearings with Hex Bores Replace Costly Precision Bearings

The Schatz Type "A" Unground Flanged "Commercial Ball Bearings with hex bores are designed to replace expensive precision bearings in many conveyor applications when load and speed conditions permit. Their cost in many cases is less than that of bushings or plain sleeve bearings—since costly machining and assembly time is eliminated.

Hex bores on these low-cost bearings make positive shaft mounting easy. The flanged outer ring is especially adaptable for mounting in tubing—common practice in conveyors. Race rings are carburized, hardened and tempered, with smoothly finished ball tracks.

••• The New Schatz Catalog No. 11 contains complete specifications on all Schatz "Commercial" ball bearings, as well as information on Schatz Bearing Engineering Service which has produced many special type bearings to solve individual manufacturing problems while reducing costs.

For additional information write The Schatz Manufacturing Company, 6750 Fairview Ave., Poughkeepsie, N. Y.

If you write maker identify as IEN - 3463

Surface-active agents in the solvent detergents hook their "oil-loving" ends to the oil in the dirt on a metal surface—then hook their "water-loving" ends to the rinse water.
Result: Solvent, oil and solid dirt are swept away in the rinse.

FREE For 24-page booklet describing these splendid precleaners and paint strippers, write Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN - 3464

MEYERCORD Nameplate DECALS Laboratory Engineered FOR EVERY SURFACE AND FINISH

Meyercord Decal Engineers and Designers Can Help You Lick that Tough Problem

If you want to ADVERTISE . . . INSTRUCT . . . or IDENTIFY on any surface from smooth, non-porous plastics to rough, pebbly materials, Meyercord engineers will come up with the answer in a hurry. We dipped into our recent orders and highlight below a few "case histories" where Meyercord Decals have been engineered for extremely difficult conditions:

AIRCRAFT INDUSTRY— Meyercord engineers developed a special identification decal for jet aircraft capable of withstanding temperatures to 900° as well as the effects of aeromatic fuels and hydraulic fluids.

ELECTRONICS INDUSTRY— A leading electronics manufacturer required a schematic diagram which could be folded compactly and placed inside communication sets. Meyercord solved the problem with a special decal applied to nylon fabric under heat and pressure.

HOME APPLIANCES— Meyercord engineers developed a new type of open-letter decal providing high color and dramatic effect—at less than one third the cost of discarded metal name plates.

MEYERCORD DECAL NAMEPLATE MANUAL and Full Information FREE

Meyercord "Mark-it" Manual shows hundreds of uses for durable, washable, decal nameplates . . . as trade marks, instructions, charts or diagrams . . . This manual is FREE . . . but request it on company letterhead, please.

THE MEYERCORD CO.
World's Largest Decalcomania Manufacturers
DEPT. R-315
5323 WEST LAKE ST.
CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 3465

ONE CONTROL DOES THE JOB OF TWO

DA-400

Available with Explosion-Proof or Weatherproof Housing

Mercoid DA-400 Series Pressure Controls incorporate a single bourdon tube which actuates two independently adjustable Mercoid magnet operated mercury switches to accomplish various circuit operations. For example:

1. Close one alarm circuit at high pressure and another at low pressure with both circuits open over operating range.
2. As an electrical interlock to open one circuit as pressure rises above and the second circuit as the pressure drops below operating range.
3. To provide two-stage control by opening or closing one circuit on a rise in pressure and the second circuit on a further rise in pressure.

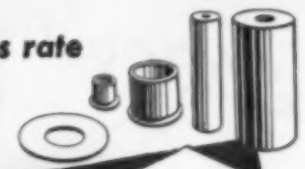
Equipped with calibrated dial and outside adjustments—Ranges 0-30 psi to 300-2500 psi—The Mercoid magnet operated mercury switches are not affected by harmful effects of dust, dirt, or corrosion—your assurance of millions of operations.

Write for Bulletin 5P

THE MERCOID CORPORATION
4201 BELMONT AVE., CHICAGO 41, ILLINOIS U.S.A.

If you write maker identify as **IEN - 3466**

How cost-wise buyers rate porous, self-lubricating BRONZE BEARINGS



GOOD BETTER BOSTON Gear

BOST-BRONZ
Oil-Impregnated Bearings
Plain • Flanged • Thrust
Cored and Solid Bars • Plates

IN STOCK AT 92 BOSTON *Gear* DISTRIBUTORS at Factory Prices

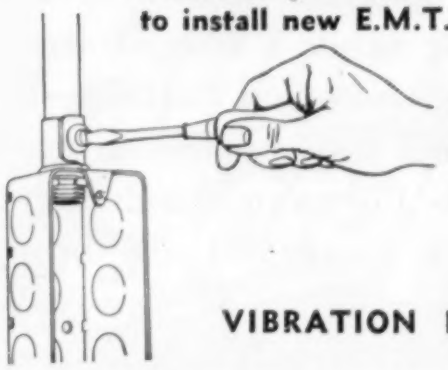
Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the Distributor nearest you.

Get this Catalog . . . lists 5112 standardized machine parts . . . your reliable "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write—Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as **IEN - 3467**

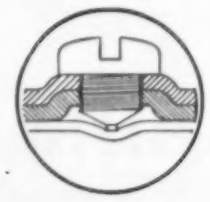
ONLY A SCREWDRIVER—

That's all you need to install new E.M.T. fittings just like this



VIBRATION PROOF!

Unusual holding action of the screw is obtained when the screw is driven home to rest on the boss and the tip of the screw becomes embedded in the tubing wall. The connection is a vibration proof bond that cannot be broken or loosened except by releasing the screw. Contact of the screw in the tubing wall performs a safe, permanent ground. Inspection is quick and easy.



SIZES

Connector design for standard boxes and coupling design to join straight runs are supplied in ½, ¾ and 1-inch sizes for standard E.M.T. thin-wall electrical conduit.

ADVANTAGES—

- RE-USABLE
- ECONOMICAL
- EASY TO INSPECT
- UNIFORM, SAFE HOLDING ACTION
- CLOSE, ACCURATE FIT
- PERMANENT GROUND
- ELECTRO GALVANIZED
- SIMPLE STRONG PRESSED STEEL CONSTRUCTION
- NO WRENCH STRAIN ON BOXES
- APPROVED BY UNDERWRITERS' LABORATORIES, INC.

ASK FOR BULLETIN 581

National Electric PRODUCTS CORPORATION
Pittsburgh 22, Pa.

NATIONAL ELECTRIC PRODUCTS

If you write maker identify as **IEN - 3469**

HANDLING . . Roller bearing skid to move heavy objects readily

Source: STOKVIS EDERA & CO.
95 Madison Ave., Dept. IEN, New York 16, N. Y.

Hardened table spikes

Multiton, the roller bearing load carrying skid, previously described IEN-7293-53, is now available with a turn table top plate as shown in the illustration. This plate takes the work load, permits swiveling the skid, between it and the floor, when a change in direction is called for. Swivel action is assisted by a T-shaped connector that applies on the cross bar at either end of the skid frame.

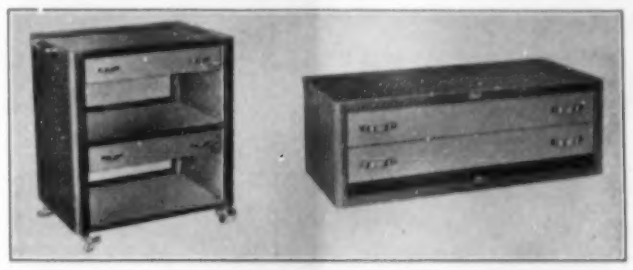
A machine to be moved is jacked up. A skid with its turn table is inserted under each corner and is positioned for movement in the desired initial direction. The load then rides on the skid rollers which form a continuous track in the skid frame and in contact with the floor. The load moves easily to a point where a turn is to be made. Then the four skids are swiveled to the new direction.

Three Servus skid capacities are between 15 and 80 ton each. The smallest measures about 8 in. in length by 3¾ in. in width. The largest is about 12 by 5 inches. Three Linkless units measure 12 to 20 in. in length by 5¼ to 8 in. in width.

If you write maker identify as **IEN - 3470**

STORING . . Tool cabinets made of steel with baked enamel finish

Source: HUOT MFG. CO.
565 N. Wheeler St., Dept. IEN, St. Paul W4, Minn.



For bench or assembly line

Porta-Cab Model 270, to the left in the illustration, is a new steel cabinet that can be supplied with casters and to which the user can add drawers as he requires them. The unit is shipped knocked down without the drawers. Each shelf bolts in place. Overall dimensions are 27 by 18 by 32¼ inches.

Chest Model 106, to the right, is made with interlocking tabs to permit adding sections as new ones are needed. Overall dimensions are 26⅛ by 12 by 9⅛ inches. The drawers measure 23 by 2¾ by 10¾ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 3471**

Sensational NEW features

FOSTORIA LOCALITE

The Perfect Lighting Tool for Machine Assembly Inspection

Directs Light Exactly as Needed

$8.12 Each in std. pkg. of 8 Less $10.50 ea.

MODEL 2-WX-700
Overall Length 31"

Reflector—New bell ventilated shape with 5½" orifice. Rotates 360°. Accommodates 100 watt A-21 or R-30 lamps. Also PAR-38, R-40, RS-40. Available with lens, if desired.

Arm Joints — New patented tension disc design. Easy, smooth action with only one hand. Available with 1, 2 or 3 arms.

Base—Universal for vertical or horizonal mounting. Also adaptable to outlet boxes. Collet revolves 360°.

Wiring—Medium screw porcelain socket. "T" rated toggle switch. 8 ft. POT-32 18-2 heavily insulated oil resistant wiring with molded plug.

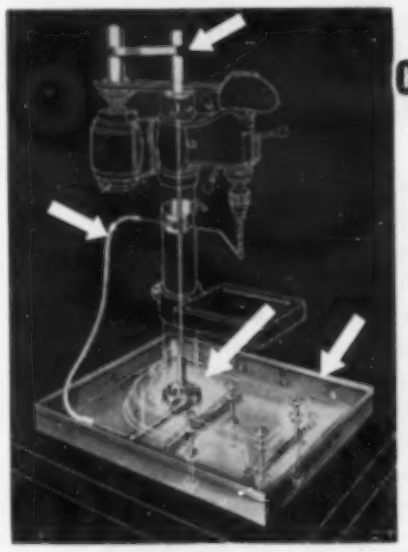
Finish—Gray baked enamel. Reflector interior, high temperature White.

WRITE for complete catalog of Localite models for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION
Fostoria, Ohio
Localites available through wholesalers everywhere

LOCALITE fostoria for Light ON the Job

If you write maker identify as **IEN - 3472**



This BETTER Coolant System
Complete, Only

$23.95 Fits any hollow-column drill press

Pays for Itself EVERY WEEK!

- Saves operator time
- Increases efficiency
- Extends drill life
- Ups speeds and feeds
- Gives exact size control and fine finish

NO EXTRA MOTOR
Work off tool's own power. Starts and stops with drill. 120 gph at 1750 rpm.

SO INEXPENSIVE
That all tools needing coolant can be permanently equipped. Saves shifting bulky tanks and cumbersome rigging.

IDEAL REPLACEMENT
Permits transfer of high-cost coolant units to big heavy machines.

PREVENTS ELECTRIC SHOCK
Can't shock or short circuit. Dangers so common with ordinary coolant systems are impossible with Wade.

100% OUT-OF-THE-WAY
Nothing on the floor to kill space and trip over, nothing to impede the operator's efficiency.

SAVES HIGH-PRICED TIME
No man hours wasted in hand applying of coolant or switching units from one tool to another. For want of this permanent automatic coolant supply, the average machinist loses enough time every few days to pay for the Wade's lifetime of service.

Get the FULL STORY! Call your Supplier or Write to:

WADE & SONS, 948 E. Truman Road, Independence, Mo.
Division of Independence Pattern and Machine Works • Phone CLifton 9129

If you write maker identify as **IEN - 3473**

Increase Your profits by knowing more about your costs

THE *Simplex* COST RECORDER

gives you 100% accounting of your employees' Time

STOPS TIME LEAKS

PRODUCES INDISPUTABLE RECORDS

REDUCES NON-PRODUCTIVE TIME

Your records show exact starting and ending time for each job... accurate printed records made by the employee, quickly, easily, without loss of time. Simplex Cost Recorders are fully automatic, and give you fast, accurate time computation for payroll make-up, as well as cost accounting.

SIMPLEX TIME RECORDER CO., Gardner, Mass., Dept. I-103
Please give us more information on:

☐ Cost Recorder ☐ Time Cards ☐ Electric Time Stamp
☐ Watchman's Clock ☐ Time Card Files ☐ Time Card Racks

Firm.....
Name.....
Street & No.....
City..... State.....

If you write maker identify as **IEN - 3474**

SLOW SPEED VERTICAL DRIVES FOR EVERY JOB...

Hygrade Drives
Hygrade with Extended Shaft
Line-O-Power Right Angle
Foote Bros.-Louis Allis Gearmotors
Worm-Helical Gear Drives

If you have an application requiring vertical drives to operate at slow speed, you will find a complete line of enclosed vertical drives at Foote Bros. These drives are newly engineered with precision generated gearing backed by advanced engineering, new techniques in manufacture and better control of material. May be had with standard output shaft or with extended shaft. Mail the coupon for information.

Foote Bros. Gear and Machine Corporation
Dept. IEN, 4545 So. Western Blvd.
Chicago 9, Illinois

Please send me information on Foote Bros. Vertical Drives.

Name.....
Address.....
City..... State.....

If you write maker identify as IEN - 3475

"Filter cartridge replacement costs cut in half!"

That's the report we've been getting from MICRO-KLEAN filter users everywhere. They get twice the effective life of an ordinary cartridge filter because MICRO-KLEAN's graduated density allows greater capacity for dirt accumulation.

Cuno's MICRO-KLEAN gives micronic filtration at high flow rates; its low pressure drop operation permits full-flow service on gravity, low pressure or suction lines.

Send for Cuno's free filtration analysis form, fill it out, and mail it to us. We'll let you know exactly what you need to handle your filtration requirements — without obligation. Cuno Engineering Corp., Dept. 6914M, Meriden, Conn. M.3.14

Remember . . . if you can pump it, Cuno can filter it

If you write maker identify as IEN - 3476

Electronic Temperature Control

...with Alnor Accuracy

Alnor, pioneer in the field of electronic temperature instruments, brings you automatic, precise temperature control for heat-treating furnaces, bake ovens—in fact, for any heating device whether electrically heated or fuel fired. It's the Alnor Temperature Controller—simple in design and operation, its accuracy proved on thousands of installations in many industries.

Easily and quickly installed, this instrument is ready to give you accurate controller service on new or existing heating equipment temperature—you merely set the pointer at the desired temperature and forget your indicating and controlling problems. But find out for yourself how Alnor accuracy and dependability can serve you in controller service; write today for complete details on the Alnor Temperature Controller . . . Alnor accuracy at a price you can afford. Illinois Testing Laboratories, Inc., Rm. 517, 420 N. La Salle Street, Chicago 10, Illinois.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 3477

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

$2 each

gives up to 2000 readings

it's this simple:
- Select the Tempilstik° for your working temperature.
- Mark your workpiece with it.
- The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	213	313	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

TEMPIL CORPORATION
11 West 25th St., New York 10, N.Y.

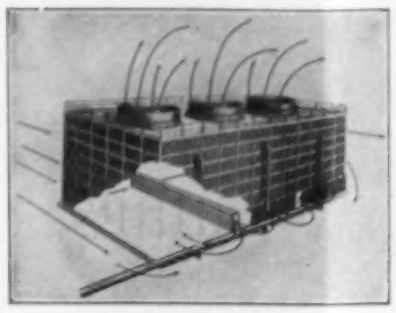
PLEASE SEND FREE—Tempil "Basic Guide to Ferrous Metallurgy"—16½" by 21" plastic-laminated wall chart in full color.

NAME _____
COMPANY _____
ADDRESS _____

If you write maker identify as IEN - 3478

REFRIGERATING . . Cooling tower absorbs heat from condensing water

Source: SANTA FE TANK & TOWER CO.
5401 S. Boyle Ave., Dept. IEN, Los Angeles 11, Calif.



Pressure is balanced

Equalizing Channels are new design in the company's line of large multi-cell cooling towers. They relieve pressure differential existing between the windward and the leeward sides by permitting air to pass completely through the tower during the presence of strong horizontal winds. They prevent exhausted air from being forced downward into the inlet area and recirculated through the tower to impede its performance.

The tower is available in a range of sizes for specified cooling capacity and to fit in available areas. Each is prefabricated and delivered ready for installation. Construction is in metal or wood enclosures with redwood slat decks in assembled removable sections arranged in mulitple.

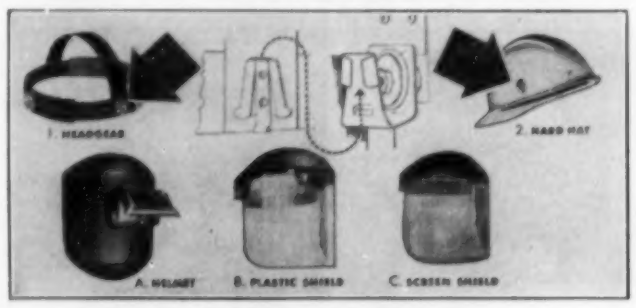
Cooling water, from which heat is to be removed, is pumped to the top from where it is delivered to flow by gravity in even distribution down through the slat decks or by means of spray heads to the decks in one or the other of two available designs. The water collects for recirculation to air conditioning and refrigerating equipment that employs water cooled condensers.

One or more blowers move air through the assembly in counterflow with the water to produce evaporative cooling action. The upward current passes through moisture eliminators for discharge from the housing top.

If you write maker identify as IEN - 3479

PROTECTING . . Head gear and hat for interchangeable helmet and shields

Source: CHICAGO EYE SHIELD CO.
2300 W. Warren Blvd., Dept. IEN, Chicago 12, Ill.



Cesco literature upon request

The head gear 1 and the hard hat 2, shown on the two sides of a new mounting clip in the illustration, are available with this clip in permanent position to permit interchanging the helmet A and the shields B and C. The new arrangement makes it unnecessary to buy duplicate head gear or hats, in connection with the helmet or shields, since any one of the three attachment units can be removed and another put in its place. It is possible to make six combinations, which formerly required twelve items, with five pieces of Cesco equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3480

thousands of users PROVE "HI-TEMP" C-5 THREAD COMPOUND IS BEST FOR ALL STUD THREADS and STAINLESS STEEL APPLICATIONS

- ✔ speeds up dis-assembly time
- ✔ prevents stud breakage
- ✔ eliminates pitting of stainless steel

NO MORE FROZEN OR GALLED STUDS ... EVEN AT 1800°F

Let us SEND you a FREE SAMPLE so you can PROVE to YOURSELF that C-5 will lick your toughest stud breakage problems!

To assure easy maintenance on products having threaded assemblies many leading product engineers have specified the use of Fel-Pro C-5 as an anti-seize coating on stud threads prior to final production line assembly.

Fel-Pro's exclusive Colloidal-Copper formula allows for easy separation and reduces stud breakage of threaded assemblies after long exposures to extreme temperatures. It eliminates pitting of stainless and alloy steel even where dissimilar metals are joined.

Conduct your own tests with C-5 "Hi-Temp" at our expense. Write on your company letterhead for Free Sample and complete data sheet TODAY!

FELT PRODUCTS MFG. CO. 1523 Carroll Ave., Chicago 7, Ill.

If you write maker identify as IEN - 3481

Protective Aprons and Sleeves

SURETY

DEEP-BOND COATING LASTS LONGER

Sureseal synthetic rubber, or Neoprene or Vinyl forced into the warp of strong fabric by Surety's Deep Bond Process.

Tests show greatly improved chemical resistance, longer wear.

Resulting in savings for you in apron and sleeve costs.

Available in both Sureseal synthetic rubber, or Neoprene or Vinyl coated one or both sides, variety of sizes.

Write for complete data and prices.

THE SURETY RUBBER CO. CARROLLTON, OHIO

In Canada, Safety Supply Co., Toronto

If you write maker identify as IEN - 3482

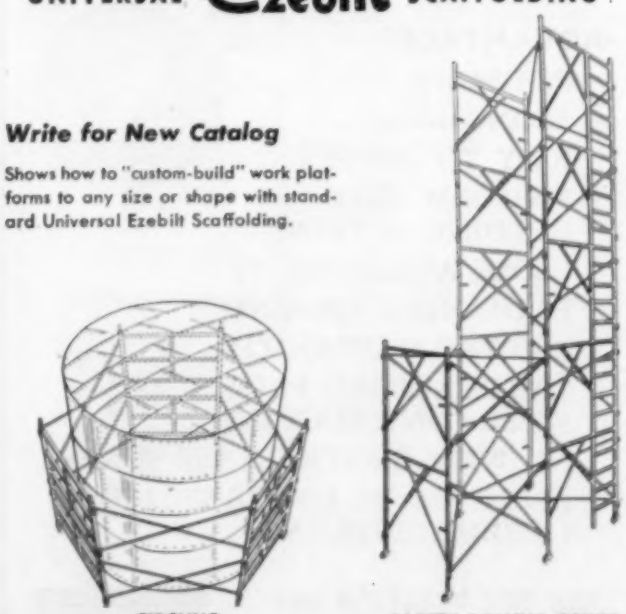
Overhead Work's *Not just 'UP'*

When you have to go *around* a job or *get inside* a curved structure, buy Universal Ezebilt—*the one scaffold* you can use on most every job. For example, Ezebilt's exclusive Gravity-Lock brace mechanism lets you "swivel" standard panels to "circle" curved surfaces, or to "rack-down" safely in narrow passages. And you don't need to fuss with nuts and bolts or loose parts — Ezebilt's rustproof Gravity-Lock helps you to put your scaffold up and take it down in much less time — handle jobs easier and faster because there are *'no bolts to master.'*

UNIVERSAL Ezebilt SCAFFOLDING

Write for New Catalog

Shows how to "custom-build" work platforms to any size or shape with standard Universal Ezebilt Scaffolding.



CIRCLING SAFETY ROLLING TOWER

Distributors offer fast help and service. See your phone directory.

UNIVERSAL MANUFACTURING CORP.
ZELIENOPLE 5, PA.

If you write maker identify as IEN - 3484

Have you a similar fastening problem?

File: Simmons LINK-LOCK

When the armed forces needed a positive, high-strength fastening device for instrument housings, transit cases, and storage boxes, Simmons developed LINK-LOCK. This brand-new device works with fingertip pressure, furnishes up to 450-lb. pull-down pressure. Open or closed, it always lies perfectly flat.

LINK-LOCK may be the answer to your fastening problem. If your design involves heavy fastening pressures, watertight sealing, high strength, resistance to impact, write for LINK-LOCK DATA SHEET.

SIMMONS FASTENER CORPORATION, 1758 No. Broadway, Albany 1, N. Y.

Simmons | LINK-LOCK QUICK-LOCK ROTO-LOCK

FASTENERS WITH USES UNLIMITED

If you write maker identify as IEN - 3485

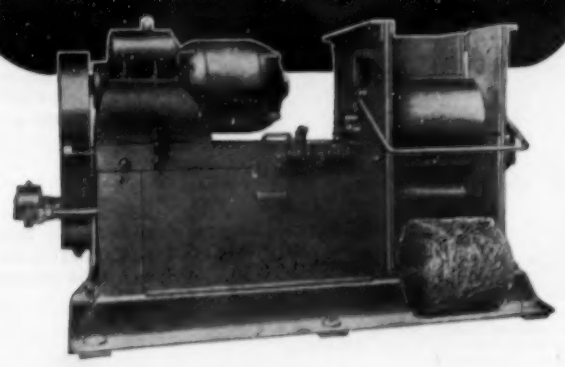
NOW! Bundle Scrap

into

18" and 24" Diameter Bundles

EASY TO HANDLE, SHIP, REMELT OR STORE . . . with the

McLanahan SCRAP BUNDLER



Designed for efficient bundling of scrap wire and strip metals, anything of a stringy nature, the new McLanahan Scrap Bundler "wraps" scrap into compact cylinders for easy handling. Fast and economical in operation, this new machine is the answer to your scrap bundling problems.

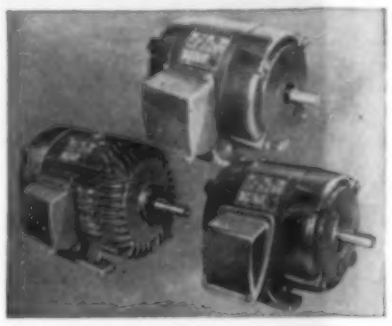
Write for new "Scrap Bundler" Bulletin Today!

McLANAHAN and STONE Corp.
Hollidaysburg, Pa. SINCE 1835

If you write maker identify as IEN - 3487

MOTOR . . Induction design in new NEMA frame sizes, 1 to 30 hp.

Source: WESTINGHOUSE ELECTRIC CORP.
Gateway Center, Dept. IEN, Pittsburgh 30, Pa.



Specifications on request

Three assemblies are available in this new Life-Line-A line of induction motors. At the top of the illustration is shown the totally enclosed non-ventilated design. To the lower left is the totally enclosed fan cooled assembly and to the lower right is the drip proof design. In all three, the ball bearing shaft is factory lubricated and sealed to minimize maintenance.

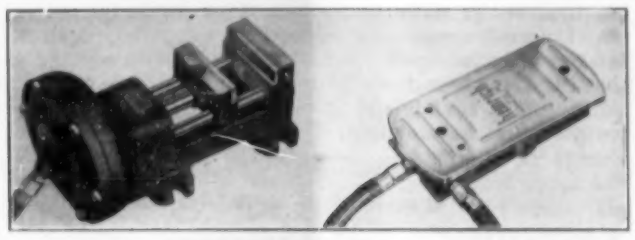
Two seals are employed on each side of each bearing to include an inner stationary seal attached to the outer bearing race and an outer rotating seal attached to the inner race. This rotating seal acts as both seal and flinger to throw off foreign particles. By-passes prevent the motor from breathing through the bearings on the totally enclosed assembly in connection with an external flinger that stops foreign particles from entering the bearing grease and the motor itself.

Construction includes Bondar wire insulation, Mylar coil insulation, cast iron frame with corrosion resistant finish. Sound level is 50 to 55 decibels. Sheet steel required in the motor has been reduced by 15 per cent by using the new silicon steels. Electrical losses have been reduced 20 per cent for a given flux density. The wound stator is dipped in Bondite insulation. The cable insulation is covered with lacquered glass braid for operating temperature to 75 deg. C. The motors conform to the new NEMA standards for dimensions in a range between 1 and 30 hp.

If you write maker identify as IEN - 3488

VISE . . Air operated design, foot controlled from plant air line

Source: HEINRICH TOOLS INC.
Dept. IEN, Racine, Wis.



The operator's hands are free

Connection is made through a foot operated valve to a plant air line to operate this new Model 33 vise. Gripping force is 15 times the line pressure. Opening is to 3⅛ in., between the 3⅛-in. jaws, by adjusting the movable jaw. Maximum movement by air pressure is ⅜ inch.

Air pressure applies on a diaphragm in the die cast aluminum cylinder body. The body castings are semi-steel. The operating parts are protected against contact with coolants, chips. Alignment is maintained by two hardened and ground bar type ways. The jaws carry removable soft steel faces.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3489

International Stapling Machine saves $20,000 a year for UARCO

Uarco, Inc., Chicago manufacturer of business forms reports a savings of more than $1600 a month with an International Retractable Anvil stapling machine.

The stapler, a double-headed, air operated model priced at only $3400, is used to close filled cartons from the outside, top and bottom simultaneously. Daily volume is 2,500 cartons of varying sizes . . . in a 12 hour period.

International Stapling Machines will save you as much as 50% on shipping costs . . . write for additional details.

INTERNATIONAL STAPLING MACHINES
INTERNATIONAL STAPLE & MACHINE COMPANY
805 East Herrin Street, Herrin, Illinois

If you write maker identify as IEN - 3490

THE *Fluidometer* SYSTEM

for the automatic batching of light or heavy liquids . . . . .

The Fluidometer System is available in either jacketed or unjacketed construction, and is adaptable to practically any liquid measuring problem, whether it involves gallons, barrels or tank cars. The automatic reset, an exclusive feature of Fluidometer, is invaluable in large scale production requiring steady repetition of operations. Send for Bulletin FL-72.

HETHERINGTON & BERNER INC.
725 Kentucky Avenue Indianapolis, Ind.

If you write maker identify as IEN - 3491

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING
We invite inquiries for Contract Drying in our fully equipped Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique Centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooling Fans and Sanitary Pumps with variable speed drives for handling liquid material and controlling the moisture.

*CONCENTRATOR AVAILABLE SEPARATELY

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

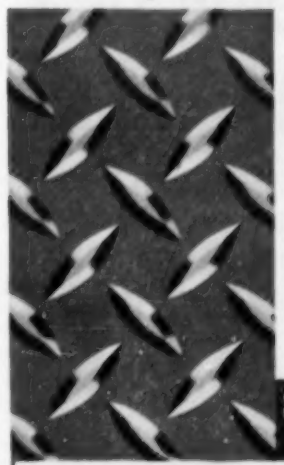
Write for New FREE Bulletin 265R

DRYING and CONCENTRATING CO.
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 3492

Foot Safety and Low Cost DO go together with

A.W. SUPER-DIAMOND
Economy Rolled Steel Floor Plate



No other safety flooring can match *Super-Diamond's* durability and easy maintenance for so low a cost.

Super-Diamond takes hard blows and heavy loads in stride . . . resists heat, fire and most chemicals.

Super-Diamond cuts maintenance . . . is easy to clean with hose, mop or broom because there are no cracks or corners to hold dirt.

Super-Diamond features an exclusive engineered raised diamond pattern that puts 40 anti-skid traction points in every footstep for extra safety.

Mail handy coupon today for full details on **Super-Diamond**—high in safety, lowest in cost. There's no obligation.

Pattern ½ actual size.

SUPER-DIAMOND
ROLLED STEEL FLOOR PLATE

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Please send your new, free Booklet SD-3 on *A. W. Super-Diamond* for safety.

Name_____ Title_____
Address_____
City_____ Zone_____ State_____

If you write maker identify as IEN - 3493

HERE'S a new standard duty ½" drill you can really "bear down on." Its 2-position auxiliary handle permits extra leverage on the tough jobs. Its exclusive rear handle adjusts horizontally or vertically so you can lean into the work... you can even remove the rear handle—or both handles—and concentrate your whole strength behind the drill body.

Features: heavy, precision-ground Jacobs gear-type chuck . . . double compound reduction gears . . . combination ball radial and thrust bearings. U.L. listed.

At Your Porter-Cable dealer's **$48.95**
(New ¼" Drill $29.95)

Porter-Cable Machine Co.
2203 N. Salina St., Syracuse 8, N. Y.
(In Canada: Strongridge, Ltd., London, Ont.)

Porter-Cable
Quality Electric Tools

If you write maker identify as IEN - 3494

Big Value in fans

HIGH-PRICED FEATURES AT LOWEST COST

HUNTER *Direct-Drive* INDUSTRIAL FAN

This powerful new fan (effective up to ½ in. static pressure) was designed for efficient performance and long life. Its heavy continuous-duty motor is permanently lubricated and sealed. Aluminum alloy blades are non-rusting, non-crystallizing, non-overloading. Direct drive reduces maintenance—no belts to adjust or replace. Blade sizes: 24 to 48 in. Automatic shutters to fit all sizes available at small additional cost.

Hunter

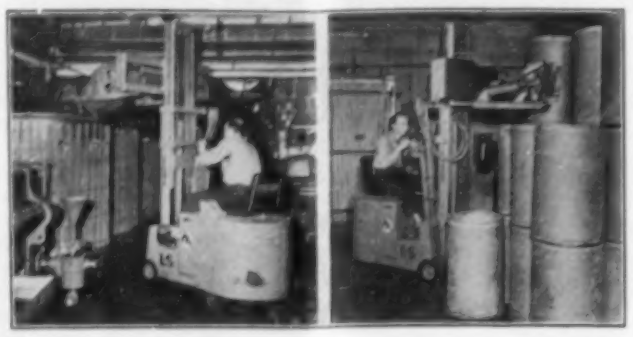
Write for Data Folder and Prices

HUNTER FAN AND VENTILATING CO.
375 S. Front St., Memphis 2, Tenn.

If you write maker identify as IEN - 3496

TRUCK . . Drum handling attachment lifts, carries, dumps by power

Source: LEWIS-SHEPARD INCORPORATED
190 Walnut St., Dept. IEN, Watertown 72, Mass.



Hydraulic movements

New attachment slides into position on the forks of the company's Model-J 1-ton electric truck. It connects by means of hose lines to the truck's hydraulic circuit through suitable valves. The operator controls clamping action and also a hydraulic pivoting movement that tilts the container 150 deg. in forward direction to dump its contents. When the attachment is not required, it can be removed from the forks so the truck can be employed for other purposes.

If you write maker identify as IEN - 3497

INSULATING . . Plastic tape for shielding and conductor covers

Source: PERMACEL TAPE CORP.
Highway 1, Dept. IEN, New Brunswick, N. J.

Technical data upon request

Type P-302 electric grade is a new plastic tape with a black vinyl film backing and a rubber base pressure sensitive adhesive for applications where high dielectric strength is required. The film backing is 18 mils in thickness. Dielectric strength is 15,000 volts. Elongation is 150 per cent. Adhesion is 25 oz. per in. and tensile strength is 65 lb. per inch.

The tape is suited for use as a shielding barrier in electronic equipment where high frequencies are involved, as an insulation over bus bars and as a protective covering for cables, particularly at splice connections. It is suited for use as a shock mounting and noise deadener in heavy duty equipment and as a surface protection in connection with burring and blast cleaning operations. Widths range from ½ to 4 in. in ⅛-in. multiples. Length is 36 yards. The tape is supplied in rolls on a 1-in. core as standard.

If you write maker identify as IEN - 3498

FASTENING . . Socket set screw in locking and conventional designs

Source: SET SCREW & MFG. CO.
5 Main St., Dept. IEN, Bartlett, Ill.

Test samples on request

Fluted socket design has been added to the company's Setko line of set screws in a range of sizes from No. 4-36 to ⅝ in. 11 threads per inch. The screw can be specified with conventional threads or with the Zip-Grip locking grip in which a continuous thread is cut on two diameters. The screw can be tightened and loosened repeatedly without danger of damage or distortion. The fluted socket prevents splitting or rounding out. It also is safe against tampering due to the need for a special key or wrench to turn it.

If you write maker identify as IEN - 3499

COMMUNICATING . . Tuning coil for use with mobile radio antenna

Source: VAARO ELECTRONIC ENGINEERING CO.
Box 5035, Dept. IEN, Long Beach 5, Calif.

Literature on request

A slider in this new tuning coil can be moved up or down until transmitter loading is obtained. At this point it is locked against further movement. The coil is available in a Model V-102 for rigs developing from 0 to 250 watt input and Model V-103 for rigs developing from 0 to 500 watt input.

Top and bottom caps are made of Royalite plastic. An inner insulator holds the coil assembly together and in alignment. It is made of Fiberglas. Inner insulator inserts are threaded. A spring loaded coil contact head assembly is made of cadmium plated brass to prevent corrosion. The outer transparent shield is made of Tenite tube. The resonance point selector shaft box is made of brass, cadmium plated.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3500

SELF-LUBRICATING BEARINGS AND MECHANICAL PARTS

SINTRLOY — DUCTILOY — SEALALOY

SINTRLOY — Powdered Bronze Bearings are used by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

DUCTILOY—An extremely tough bearing material that is actually malleable and has a high resistance to shattering. Powdered Bronze Bearings and Mechanical Parts to be used in heavy duty applications where greater strength and shock resistance are required.

SEALALOY—Powdered Bronze Material used for mating rings in rotating mechanical seals to give excellent wearing qualities and shock resistance. Manufactured to your exact requirements.

"National's widely experienced engineering and design departments are always at your service to help you with parts that must be specially designed to their particular application.

NATIONAL MOLDED PRODUCTS, INC.

1945 Mill Street St. Marys, Pa.

If you write maker identify as IEN - 3501

Put the WALES Fabricator through its paces at your plant!

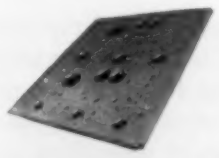
Showing *Wales Fabricator* in new mobile unit for demonstration at your plant. See it operate at your plant before you buy any other type of hole punching, notching or nibbling equipment.

Showing *Wales Tru-Edge Shear* for circle and shaped cutting, beading and forming in the new mobile unit. Material is sheared, not punched.

■ Above new Wales-Strippit mobile unit (1 of 3) brings the Wales Fabricator right to your plant. You and other plant executives can use this unique Wales Fabricator to produce your own parts. Your time study men can evaluate its astounding money-saving, cost-saving efficiencies.

The Wales Fabricator is the only machine of its kind and is designed for rapid interchangeability for punching, notching and nibbling. Work from blueprints or operation sheets...no *templates required.* Can you match the Wales Fabricator time studies below?

SEE FOR YOURSELF. Operate it. Put it through its paces. Write today for Wales Catalog 10-AA and an appointment for a demonstration at your plant.



An electronic chassis, 12½" x 11½" with 118 holes and 4 notches was completed including setup in only 32.45 minutes and subsequent pieces in only..... **6.44 MIN.**

A part of a piece of farm equipment 72½" x 22" with 32 holes and nibbled cut-out was finished including setup in only 12.01 minutes, subsequent pieces in only...**2.32 MIN.**

WALES-STRIPPIT CORPORATION
George F. Wales, Chairman
361 Payne Avenue, North Tonawanda, N. Y.
(Between Buffalo and Niagara Falls)
Wales-Strippit of Canada Ltd., Hamilton, Ontario
Specialists in Punching and Notching Equipment

If you write maker identify as IEN - 3503

With Procunier Tapping Heads

Whether it's light, medium or heavy tapping, for short or *long* periods Procunier Tappers are performing with a new found ease, a more dependable and consistent accuracy and providing many extra hours of tapping efficiency. They maintain quality and reduce spoilage and breakage to a minimum.

Here are just a few "reasons why":

New, sensitive double-cone friction clutch automatically regulates driving pressure with a soft "cushioned" action; simple, one shot lubrication; ballbearing equipped; heat treated gears with special gear reversing mechanism; unique double supported tap holding spindle; lightweight housing; exclusive Tru-Grip Tap holder; plus other important features.

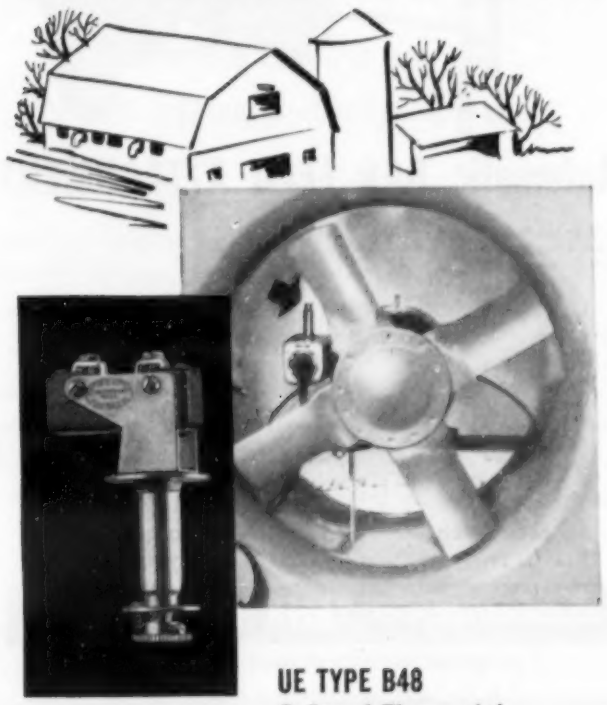
Write for free circular

Giving full details and specifications on the remarkable line of Procunier Tapping Heads.

Procunier
Safety Chuck Company
18-16 S. Clinton St., Dept. 3, Chicago 6, Ill.

If you write maker identify as IEN - 3504

UE TEMPERATURE CONTROLS HELP FAN-PAC SYSTEMS IMPROVE BARN VENTILATION



UE TYPE B48
2-Speed Thermostat

Good ventilation at ideal temperatures of 50°F in dairy barns and 40°F in poultry houses means increased milk and egg production. These temperatures are accurately maintained by the United Electric Type B48 thermostat used in Fan-Pac ventilating systems made by American Machine and Metals Co., De Bothezat Fans Division. The Type B48 slows down – or speeds up – the two-stage motor-controlled vent fan according to the temperature change required. As Fan-Pac manufacturers state, the Type B48 is "easy to set, accurate, dust-proof, moisture-proof and fool-proof".

United Electric manufactures a wide line of standard controls that are used in aircraft fuel purging systems, paper mill machinery, diesel engines, milk pasteurizers, room air conditioners and in countless other industrial and domestic applications.

Special controls can either be adapted from standard models, or custom-built by United engineers working in cooperation with your own product development engineers.

Write today for information on the complete line of United Electric controls.

Standard and special thermostats and pressure switches

UNITED ELECTRIC CONTROLS CO.
80 School Street, Watertown, Mass.

If you write maker identify as IEN - 3506

BROACHING . . Horizontal machine cuts in both directions of ram travel

Source: COLONIAL BROACH CO.
Box 37, Dept. IEN, Detroit 13, Mich.

For a production line

Two sets of carbide insert broaches, one to cut from right to left and the other from left to right, mount on the reciprocating ram of this new Model HM-25-130 machine. Work is secured on a trunnion mounted fixture and is swung up into vertical position to make the first right to left cut. At the end of this cut the fixture moves vertically downward 10 in. and the ram returns to its starting position while making the second cut. The fixture swings into horizontal position for unloading and loading.

Ram width or height measures 24 inches. Stroke is 130 inches. Stroke speed is infinitely variable between 30 and 150 fpm. in both directions. The ram rides on hardened and ground ways and is provided with automatic pressure lubrication. Drive is by a 150-hp. dc. motor deriving its current through the variable speed control from a motor generator set.

The motor operates in connection with a Cone-Drive worm gear set and a ground helical pinion that drives a rack. Metal is removed at the rate of 3¼ lb. per cycle. Time for each cycle is 21 seconds. Floor space, including the control cabinets and motor generator set, measures 194 by 290 inches. Overall height is 96 inches. Weight is about 80,000 pounds.

If you write maker identify as IEN - 3507

TRUCK . . Motor driven fork lift designed for car and truck loading

Source: YALE & TOWNE MFG. CO.
11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa.

Cam-O-Tractor control

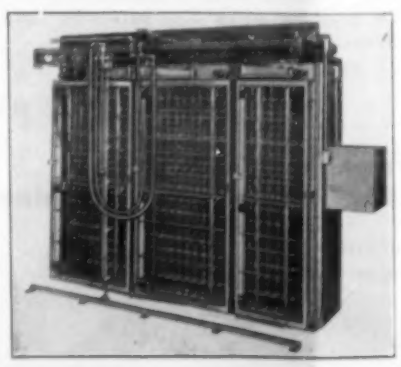
Narrow width and overall height at 68 in., measured from the floor to the top of the mast, characterize the construction of this new Safety Silhouette truck. It can ride in and out of freight cars and motor vehicle trucks. It can operate in narrow aisles and low head room. The mast is sufficiently high to protect an average operator riding in seated position. The truck is designed so the brakes are set and power is shut off if the operator leaves his seat.

The truck is available in 1 and 1½-ton capacities. Power is supplied by a 15-kwh. 30-volt battery, sufficient for an 8-hr. shift. Wheel base measures 50 inches. The truck will operate in 61-in. intersecting aisles when equipped with 36-in. forks. They are adjustable laterally for width from 10 to 31½-in., measured between their outside edges. Loads can be stacked to 100 in. above the floor. The forks tilt 3 deg. forward and 10 deg. toward the rear. The undercarriage will clear the floor on a 41½ per cent grade so it can ride over steep bridge plates.

If you write maker identify as IEN - 3508

DUST COLLECTING . . Electrostatic with automatic washer and conditioner

Source: AMERICAN AIR FILTER CO.
215 Central Ave., Dept. IEN, Louisville 8, Ky.



Bulletin 252-E3

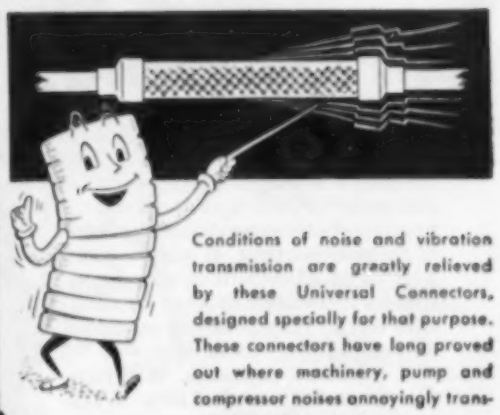
New equipment for automatic washing and conditioning, known as Type H, has been made available to specification for all sizes of the company's electrostatic dust collecting equipment larger than 6 ft. in width. The equipment washes the collector plates with water sprays, following initiation of the automatic cycle by pressing a button. It moves twice across the collector on the washing cycle and, after a 5-min. drying period, sprays the collector plates with adhesive to condition them for continuing dust collecting operation.

The washer travels on an overway track extending the width of the Electro-Cell. It carries separate water and oil lines with uniformly spaced nozzles placed at a 5-deg. angle to the vertical plane of the collector plates for through penetration. Water eliminators are added to the rear to catch any surplus spray that escapes the plates. These eliminators consist of continuous blankets of Amer-glas media supported between grids.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3509

✓ DAMPEN NOISE ✓ ABSORB VIBRATION with UNIVERSAL VIBRATION CONNECTORS



Conditions of noise and vibration transmission are greatly relieved by these Universal Connectors, designed specially for that purpose. These connectors have long proved out where machinery, pump and compressor noises annoyingly transmit through the system.

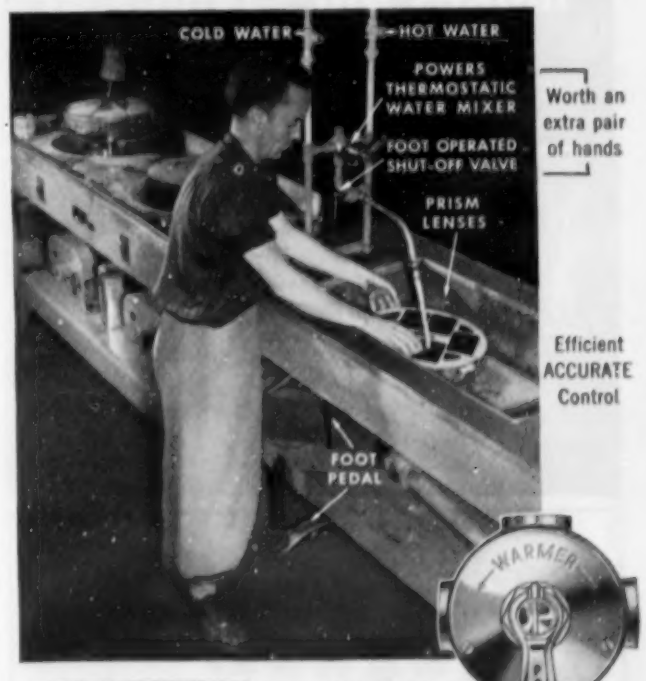
Available in standard lengths with female or male sweat-fittings for attaching to copper tube lines—or with solid male NPT threads for coupling to threaded pipes.

Send us your problem for recommendations. Ask for Catalog U-111 for your file.

UNIVERSAL METAL HOSE CO.
2131 SOUTH KEDZIE AVENUE • CHICAGO 23, ILLINOIS

If you write maker identify as IEN - 3510

POWERS Control Helps argus CAMERAS, Inc. produce high quality precision lenses



Worth an extra pair of hands

Efficient ACCURATE Control

POWERS Thermostatic WATER MIXERS

Save Labor and Hot Water also Help Prevent Damage to Lenses

Photo above shows one of 75 washing operations in ARGUS CAMERAS, Inc. large modern lens polishing department. Here lenses are made for their popular line of cameras, telescopes and optical instruments used in our nation's defense.

Combination of a Powers Type H Thermostatic Water mixer and a BRADLEY foot operated shut-off valve releases both of worker's hands for lens washing. Accurate control of water temperature prevents damage to lenses. Instant shut off of washing water by foot operated pedal prevents waste of hot water.

Double-Safety Feature of POWERS Water Mixer shown above: It *thermostatically* mixes hot and cold water and delivers the mixture at any temperature desired regardless of **pressure** or **temperature** changes in water supply lines. Failure of cold water instantly shuts off the delivery. Users often report accuracy of ± ½° F. Capacity 5 to 10 gpm @ 45 psi. *Write for Bulletin 365.*

Larger Capacity Water Mixers available up to 1200 gpm @ 45 psi. Write for Catalog WC. (b66)

THE POWERS REGULATOR CO., SKOKIE, ILL.
Offices in over 50 Cities, see your Phone Book • Established in 1891

If you write maker identify as IEN - 3512

IT'S QUIET
because it's
SUPER-SONIC!

Chicago Pneumatic's new CP-3008 is a really quiet air powered screwdriver. Its Super-sonic exhaust changes sound waves to a frequency which approaches the limit of human hearing. It weighs only 1 lb. 14 oz. Has built-in speed control for precision driving on delicate work. Torque easily adjusted without special tools. Has #4, #6 and #8 screw capacity. Will handle some #2's and #10's. Write for Bulletin SP-3096.
Chicago Pneumatic Tool Co., 8 East 44th St., N. Y. 17, N. Y.

Chicago Pneumatic

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 3513

New HYDRAULIC RAMP makes big savings at your loading docks

Moving Up or Down, the Leva-Dock Ramp keeps on the level with the truck or trailer bed. It compensates 4 ways for varying truck bed heights, out-of-level trucks, spring deflection.

Faster Handling • Less Breakage • Greater Safety
Power trucks move in and out of trucks and trailers faster, in safety, on the LEVA-DOCK RAMP. This hinged, self-leveling ramp positioned by an hydraulic jack fits into your loading dock and becomes part of the dock floor when not in use.

The LEVA-DOCK RAMP eliminates use of steel plates, bridge ramps or slow and expensive methods. Supports 20,000 lb. load in operating position. New automatic safety device prevents accidents and delays.

6 New Models—Lower Prices—Economical operation is by *self-contained electric power unit or compressed air.* Simple to install. Hundreds of dependable Rotary LEVA-DOCK RAMPS now in use are effecting substantial savings in loading costs.

Rotary
LEVA-DOCK RAMP®

Mail coupon for complete data and prices
Rotary Lift Co.,
1147 Kentucky,
Memphis 2, Tenn.
Send information on new LEVA-DOCK RAMPS to:
Name.....
Address.....

If you write maker identify as IEN - 3515

TESTING . . Portable aspirator detects sulfur dioxide gas in air

Source: MINE SAFETY APPLIANCES CO.
21 Braddock St., Dept. IEN, Pittsburgh 8, Pa.

Refillable

Concentrations to 50 ppm., in an atmosphere, can be detected with this new sulfur dioxide aspirator. Maximum allowable concentration of the gas, for working atmospheres, is 10 ppm. for an 8-hr. exposure. The user squeezes the bulb three times to take in an adequate air sample, then reads the concentration on a graduated scale on the detector tube. Reagent in the tube turns from blue to white and the scale reads the length of decolorization in terms of per cent of gas in sample.

Industrial divisions that have need for this type of instrument include fertilizers, petroleum refining, chemical manufacturing and processing, iron and steel, coal mining, paint and pigment, rayon and cellulose, pulp and paper, explosives, textiles, rubber and non-ferrous metals. Power plant and other large volume users of coal and fuels can use it also to periodically check at their smoke stacks.

If you write maker identify as IEN - 3516

DRIVE . . Pulley lagging provides secure traction for flat belt

Source: MAIN PRODUCTS CORP.
1241 Carpenter St., Dept. IEN, Philadelphia 47, Pa.

Works with any type of belt

Neolag trade names a new combination of liquid neoprene bonding fluid and a cured neoprene sheet for application on flat and crowned pulley surfaces to provide good belt traction. A pulley can be lagged in place. No fastenings, other than the adhesive liquid, are required. This liquid forms an integral unit with the sheet over the pulley surface.

Application starts with cleaning the pulley to remove loose dirt, scale, grease and moisture, employing a solvent cleaner the company supplies. Next a single coat of lagging primer is applied by brush or spray and allowed to air dry for 15 to 30 minutes. This is followed by brushing on a coat of the bonding fluid which is allowed to air dry for an hour and a half at room temperature.

Finally the single sheet of Neolag is spread evenly on the pulley surface without stretching and is cut with a knife at the lapping point so the two edges will fit evenly together. The bonding fluid reaches its maximum strength in 4 to 8 days, but can be put into service immediately.

If you write maker identify as IEN - 3517

SHEARING . . Hydraulic machine, portable, cuts 1½-in. steel bar

Source: MANCO MFG. CO.
Grove & West, Dept. IEN, Bradley, Ill.

Makes square cut

The shearing head, in this new Type H-90 Guillotine machine, is assembled on a housing that encloses a motor driven hydraulic pump. The housing is equipped with casters for portable application. The assembly weighs 950 lb. and rates 70 ton. Overall height is 48 inches.

Control centers at a foot or hand switch. Interchangeable dies can be placed in the head for work that varies in diameter in 1/16-inch increments.

If you write maker identify as IEN - 3518

FILTERING . . Portable equipment cleans oils and coolants at a machine

Source: CUNO ENGINEERING CORP.
Dept. IEN, Meriden, Conn.

Returns clean fluid

Cuno Portable is a new assembly of micronic filter, motor driven pump, oil resistant hoses and pressure gage on a caster equipped base. The assembly can be moved to a machine at which hydraulic oils, coolants or sump oils require cleaning. The fluid is pumped out of the machine, passed through the filter and returned to service.

The 4-gpm. pump is driven by a ½-hp. motor. The filter removes foreign matter as small as 25 microns.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 3519

Auto-Diesel *sells* *Quality* PISTON RINGS *in small* quantities *at* ATTRACTIVE PRICES!

Since 1921 Auto-Diesel have supplied hundreds of firms with quality piston rings in small quantities—at ATTRACTIVE PRICES. We specialize in this type of business and are set-up to produce economically. Can make quick delivery. Millions of Auto-Diesel Piston Rings have been used as original equipment or replacement in compressors, hydraulic cylinders, valves, etc.

FOR DIE CASTING MACHINES

Auto-Diesel Hard Steel Plunger Rings have made outstanding records on die casting machines. Many of our customers that had frequent shutdowns before using our rings go for many months without one shutdown due to ring failure. We can supply rings, gaskets and circular parts for a large variety of machinery including marine, aircraft, locomotive, hydarulic, compressed air, steam, refrigerator, etc., etc. We specialize in precision parts and rings for the aircraft industry. Our Engineers are qualified to help you with ring problems. WRITE TODAY.

Write to

THE AUTO-DIESEL PISTON RING CO.
3139 Superior Avenue • Cleveland 14, Ohio
"RINGS and SHAPES *Since* 1921"

If you write maker identify as IEN - 3520

Automatic BAR FEED ATTACHMENT

Kalamazoo Metal Cutting Band Saws lead the field. Get details on

• MODEL 8C
Cuts 8" round, 16" flat, 8" pipe.

• MODEL 1220
Cuts 12" round, 20" flat.

• MODEL 610
Cuts 6" round, 10" flat.

Converts *Kalamazoo* metal cutting band saws to fully automatic cut-off machines. Feeds rounds, flats, hex, pipe, tubing, etc.—any length from 3/16" to 12".*

Here's truly automatic sawing that offers you savings never before possible at such a low investment.

*Additional feeding length to 30" available at extra cost.

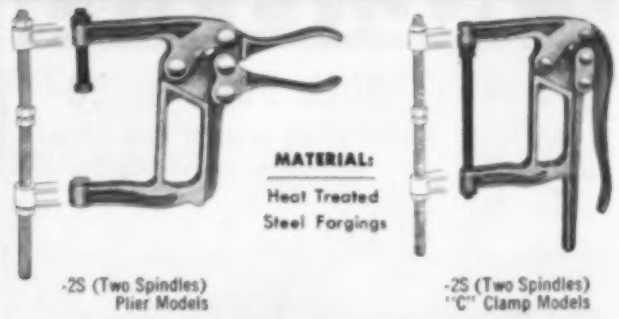
GET FULL DETAILS FROM YOUR Kalamazoo DEALER, TODAY.

MACHINE TOOL DIVISION
***Kalamazoo* TANK and SILO CO.**
311 HARRISON ST., KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 3521

If you write maker identify as IEN - 3522

ANOTHER STEP FORWARD
DOUBLE-SPINDLE MODELS



-2S (Two Spindles) Plier Models

-2S (Two Spindles) "C" Clamp Models

With this new double-spindle arrangement you can now clamp your work anywhere within the throat gap.

Available in 4 series—Models for 1-1/8 — 2-7/8 3-7/8 and 5-7/8 maximum throat gap.
All models have 2-1/4 throat depth and a clamping force of 1200 pounds.

Above illustrations show 3-7/8 inch throat gap models.

Along with the above, we also offer Pliers and "C" Clamps of other throat gap and depth and a full line of Toggle Clamps for fixed mounting, both manual and air-operated.

Send for complete catalog and templates.

Sales offices in principal cities—Teletype DE 49

KNU-VISE PRODUCTS **LAPEER MFG. CO.**

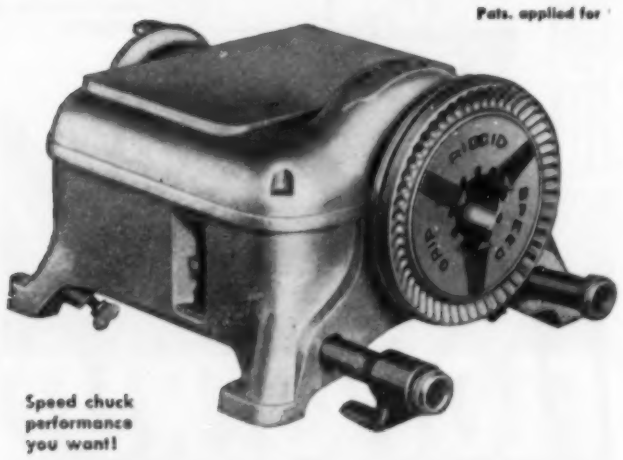
3060 DAVISON ROAD • LAPEER, MICHIGAN
WESTERN DIVISION — 422 MAGNOLIA • GLENDALE, CALIF.
CANADIAN DIV. — HIGGINSON ENGR. • HAMILTON, ONT.

If you write maker identify as IEN - 3523

Now!...New 400A RIDGID

Power Drive with New Speed-Grip Chuck

Pats. applied for



Speed chuck performance you want!

Entirely new principle of gripping pipe or rod
Not just another hammer chuck

★ Speed-Grip Chuck guaranteed to hold any kind of pipe securely both ways, *forward and reverse.*

★ No slipping, even in driving geared tools.

★ Easy to operate: close grip-tooth jaws on work with hand wheel, sock it lightly—motor action makes it hold still tighter.

★ Releases easily by turn of hand wheel.

Scores of thousands of these remarkable "400's" are turning pipe everywhere for easy threading, cutting, reaming with hand tools, saving time and work. For ⅛" to 2" pipe, ¼" to 2" bolts, but lots of power for geared tools to 12". Now, with new Speed-Grip Chuck, it's unbeatable. **No. 400 with lathe-type chuck also available.** See it, try it at Your Supply House!

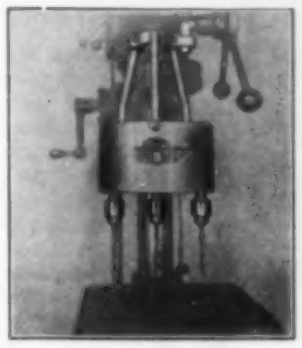
THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID
Work-Saver Pipe Tools

If you write maker identify as IEN - 3525

DRILLING . . Multi-spindle head with three adjustable ¼-in. spindles

Source: SILVER-KING CORPORATION
Dept. IEN, Aurora, Ill.



Larger to order

The center spindle in this new assembly in the company's drill head line, previously described IEN-11906-51, connects direct to the chuck in the spindle of a drilling machine. The head frame clamps to the spindle quill. Two roller chains connect the other two spindles to the central one. Two idler sprockets ride the chains to maintain correct tension as the other spindles are adjusted in annular grooves for required positioning in a diameter range from 3 to 5½ inches.

Each spindle is equipped with a ¼-in. Jacobs chuck and is mounted in shielded ball bearings. The head applies in a drilling machine rated at ½ in. or more. It fits a 1¾ to 2¼-in. quill.

If you write maker identify as IEN - 3526

CIRCUIT BREAKER . . Trip free, 1, 2, 3-pole design, to 100 amperes

Source: I-T-E CIRCUIT BREAKER CO.
1924 Hamilton St., Dept. IEN, Philadelphia 30, Pa.

Solderless terminals

New E-frame circuit breaker has been designed for use in individual enclosures, load centers, switch boards, panel boards. It provides quick make and quick break contact action, with thermal magnetic tripping in which all contacts open simultaneously, whenever an over-current is imposed on any one pole. The trip free handle mechanism prevents the breaker from being closed against a fault. The three position handle indicates "on", "off", and "trip" positions. Ratings are 15 to 100 amp. on 125-volt ac. or dc. in single-pole construction and on 220-volt ac. or 110/220-volt dc. in 2 and 3-pole assembly. Interrupting capacity is 5,000 amperes.

If you write maker identify as IEN - 3527

CASTER . . Floating hub design cushions truck in high-speed operation

Source: BASSICK COMPANY
439 Howard Ave., Dept. IEN, Bridgeport 2, Conn.

For medium duty

Series "09" and "10," with 5½ and 7-in. wheels, have been added to the company's Floating-Hub spring cushioned casters, previously described IEN-3-43. Both sizes are available in swivel and rigid design and with rubber or semi-steel tread wheels in 2-in. tread widths.

The hub, in which an eccentric shaft is backed by a spring, provides cushioning action in supporting a load, adds its action to the cushioning action of the tire to permit high speed travel, free from shock to the load or tendency to shimmy. Load capacity ranges to 700 pounds. Ball bearings are standard in the assembly.

If you write maker identify as IEN - 3528

BEARING . . Ball design, is rubber mounted in a steel housing

Source: STEPHENS-ADAMSON MFG. CO.
231 Ridgeway Ave., Dept. IEN, Aurora, Ill.

Illustrated data in Bulletin 1253

New design in the Sealmaster ball bearing line employs rubber mounting in pressed steel housings to isolate noise and vibration. The synthetic rubber mounting rings are resistant to attack by oil and grease. The bearing itself is lubricated for life and sealed at the factory. The bearing is electrically grounded to the steel housing to prevent build up of static charge. The housing is available in several designs. The line includes sizes for six shaft diameters ranging from ½ to 1 in. in pillow block, flange and cartridge assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . Ratings . . See Page 50

If you write maker identify as IEN - 3529

60-DAY FREE TRIAL
of America's most popular industrial stool

A tired worker costs MUCH more than a good chair

- 4-way adjustable backrest
- Scroll shaped posture seat
- Tamper-proof tubular all-welded construction
- 3 adjustable height ranges.

Now test Royal's famous No. 515 stool in your own plant without cost or obligation. See why the country's top firms choose it for superior versatility and durability. Write for free trial stool today!

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175 North Michigan Avenue, Dept. 203, Chicago 1

If you write maker identify as IEN - 3530

get the facts

20 informative pages on

CENTRAL VACUUM CLEANING SYSTEMS

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Protect plant equipment, personnel, and product with an effective central vacuum cleaning system.

How to figure requirements, schematic layouts, dimension and application tables, installation drawings and photos, and lots more! Your plant needs this catalog.

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If you write maker identify as IEN - 3531

SEL-LOK SPRING PINS *won't vibrate loose*

Use them as hinge pins, use them to fasten gears, pulleys and sheaves to steel shafting, use them to replace keys, keyways and cotter pins—they won't work loose. For complete information, write STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

Sel-lok spring pins are shock resistant and vibration proof • eliminate expensive reaming operations • replace tapered or grooved pins • easy to insert and remove • reusable • accurate in diameter and length • reduce installation costs • lighter in weight and as strong as a solid cold-rolled steel pin of the same diameter • available in a full range of lengths and diameters

SEL-LOK SPRING PIN DIVISION **sps**
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 3532

UP TO 50% MORE CUTS PER BLADE

Millers Falls "BLU-MOL"®

Here is the greatest high-speed power blade ever developed for general all-purpose hacksawing. In actual tests, even on the toughest sawing jobs, Millers Falls "Blu-Mol" delivers up to 50% more cuts per blade.

That's because "Blu-Mol" blades are machined from a specially-selected high-speed steel — and precision heat-treated by an exclusive Millers Falls process. The result is a blade of extreme tooth hardness and toughness, with a stubborn, long-lasting resistance to abrasion and wear on any machinable material.

Write for details or let us arrange a demonstration for you on "Blu-Mol" power and hand Hack Saw Blades, and "Blu-Mol" high-speed, welded-edge Hole Saws. All bring you the same unique qualities that are setting records for performance and economy in thousands of plants.

The world's broadest, most highly-developed line of metalcutting saws

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The Mark of Superiority

MILLERS FALLS COMPANY
Dept. IE-1, Greenfield, Mass.

If you write maker identify as IEN - 3533

Find out why

more and more molders, extruders, ovens, kilns, furnaces and others use

Gardsman

PYROMETRIC CONTROLLERS

- to improve uniform quality
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Model JP
PROPORTIONING CONTROLLER

New Accuracy for Most Uses

This modestly priced instrument automatically adjusts the ratio of power "on" and "off" over a time-cycle to maintain desired temperature. After heating to the "proportioning band" (1% of scale range) it "anticipates" temperature change of load, correcting for lag in both heating and cooling.

Model JS
STEPLESS CONTROLLER

Exclusive Design gives closer Control than otherwise possible

This unique instrument employs no relay, ends dependence on any form of "on-off". It modulates input through infinite stages according to demand, maintaining a desired temperature *precisely*. It also indicates true temperature at all times, offers dual pilot-lights and other features.

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Complete line of pyrometric controlling and indicating instruments—including On-Off, High Limit, Program, and Multi-Switch Position Indicator—plus Thermocouples and Accessories.

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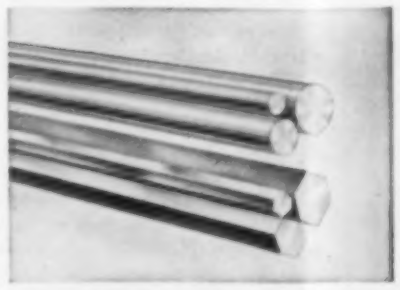
PLEASE SEND ME FREE BULLETINS ON
JP ☐ JS ☐ OTHER ☐
NAME ____
FIRM ____
TITLE ____
ADDRESS ____
CITY ____ ZONE ____ STATE ____

If you write maker identify as IEN - 3535

STEEL . . Cold drawn bar stock is lead bearing for fast machining

Source: LA SALLE STEEL CO.
Box 6800-A, Dept. IEN, Chicago 80, Ill.



Bulletin, "Super-La-Led"

Super La-Led is a new lead bearing open hearth steel also containing sulphur, phosphorous and manganese. The steel contains about 0.25 per cent lead and 0.50 per cent sulphur. It can be machined at speeds approaching those for brass. It is suited for use, in the place of brass, on work parts where corrosion is not a factor and where brass has been used previously because of its machinability. It is available in rounds measuring ¼ to 3 in. and in hexagons from ⅜ to 3 inches. In addition to machining, the steel can be crimped, riveted and staked. It is an excellent material in which to roll threads.

If you write maker identify as IEN - 3536

INSULATING . . Sound dampening tape to apply on thin sheet metal panels

Source: PERMACEL TAPE CORP.
Highway 1, Dept. IEN, New Brunswick, N. J.

Adheres to panel

Acoustimat-12 is a new sound damping tape made of unbleached cotton cloth, aluminum foil and a rubber base pressure sensitive adhesive. The foil measures 0.0017 in. in thickness. The material is supplied in 50-yd. rolls with widths at ½ to 12 in. in ¼-in. multiples and with a maximum width of 36 inches. Overall thickness is 0.016 inch.

Application, by means of a roller, adheres the cotton cloth side to a sheet metal panel and presents the aluminum foil as the outer surface. Effect is to dampen transmission of sound due to vibration in the panel and to insulate thermally because of the low heat conductance of the rubber base adhesive and the reflective action of the aluminum foil. The material is flame proof and acts to protect panel materials such as wood or plastic against burning. It makes the surface weatherproof.

If you write maker identify as IEN - 3537

TRUCK . . Two-wheel hand unit with glide bars for curbs and stairs

Source: NUTTING TRUCK & CASTER CO.
1125 W. Division St., Dept. IEN, Faribault, Minn.

For utility use

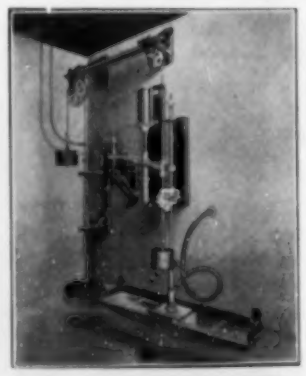
Figure 1152 is new construction in the company's two-wheel tubular steel frame hand truck to which glide bars have been added to slide an empty or loaded truck up or down a curb or stairway. The frame measures 14 by 47 in. and can be equipped with one or two handle extensions. Mounting is on 10 by 2.75 semi-pneumatic rubber tired wheels. Aluminum disc centers ride on cage type solid roller bearings and are equipped with Zerk grease fittings.

Load capacity, with the standard wheels, is about 320 pounds. This can be increased to 550 lb. upon specification by changing the wheel design. The truck nose also can be specified solid or open in 5, 7 and 9-in. lengths.

If you write maker identify as IEN - 3538

SALVAGE . . Skimming machine recovers oil from waste liquids

Source: SIMPLEX VALVE & METER CO.
6717 Upland St., Dept. IEN, Philadelphia 42, Pa.



Automatic

Rectangular trough is float controlled to ride slightly below the interface level between a waste liquid and oil riding upon it in this new skimmer. The trough is mounted, with the necessary control equipment, in a settling chamber adjacent to a point in a plant where the oil and waste can accumulate. Oil flows into the trough from where it is pumped by an externally mounted pump. The waste water flows to the sewer. The oil can be salvaged. At the same time pollution is removed from the waste flow. Operating mechanisms are made of stainless steel or bronze and all other metal parts have corrosion resistant coatings.

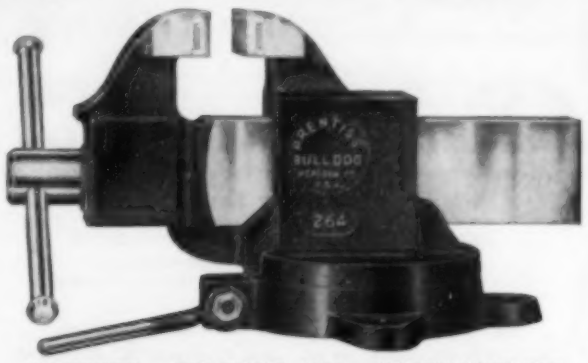
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3539

PRENTISS

"BULL DOG" VISES

Backed by 86 years of time-proven acceptance by industry.



MACHINISTS — TOP SWIVEL JAW — COMBINATION PIPE
HINGE PIPE — WOODCUTTERS — UTILITY

Renewable steel jaws that cannot work loose, swivel base with a positive lock plus other features that give you vises that will stand the most severe tests. Send for THE NEW PRENTISS CATALOGUE TODAY.

Your Industrial Distributor can supply you

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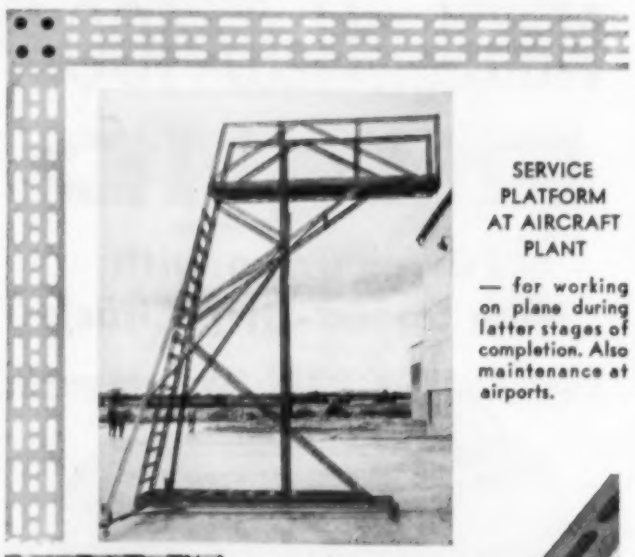
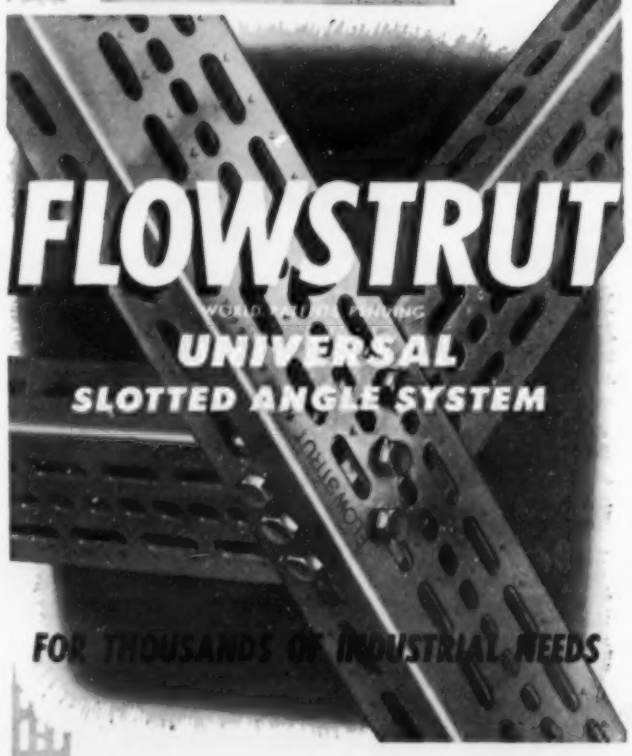
OF THE CHARLES PARKER CO., MERIDEN, CONN., U. S. A.

If you write maker identify as IEN - 3540



SERVICE PLATFORM AT AIRCRAFT PLANT

— for working on plane during latter stages of completion. Also maintenance at airports.



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No drilling, welding, riveting or finishing!

- 40 pre-drilled bolt holes per foot
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- requires only a wrench and a cutter
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- Bonderized baked grey enamel finish
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If you write maker identify as IEN - 3542

For Quick, Permanent Roofing

on any type of structure

TRUSCON FERROBORD® STEEL ROOFDECK

This strong, lightweight, steel roofdeck can be applied to any flat, pitched or curved roof structure. Large areas can be covered quickly. The members are so designed and formed that each unit firmly interlocks with the adjoining unit along the full length, achieving the maximum in lateral distribution of concentrated loadings. The members are fabricated in units long enough to span over three or more purlin spacings.

Ferrobord is manufactured from both 20-gage and 18-gage copper-bearing strip steel. Each unit is 6 inches wide and has a depth of either 1½" or 1¾". WRITE FOR FREE BOOKLET!

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REPUBLIC STEEL
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Export Dept.: Chrysler Bldg., New York 17, N.Y.

If you write maker identify as IEN - 3543

Announcing!

NEW USF® RIGID-FRAME

40' CLEAR SPAN

Industrial Steel Building

Easily Erected - Single or Multiple

An entirely new all-steel building offering a 40' clear span without columns, full 14' head clearance and any length in multiples of 20'. This building is also arranged for use in multiples by joining at the eaves. A variety of sidewall treatments allows full versatility. Designed to meet most codes.

CLIP-AND-WEDGE SPEEDS ASSEMBLY

All sheeting is attached by the famous USF Clip-and-Wedge method that requires only a hammer. 100% salvageable if ever dismantled, too. No fitting . . . no drilling or holes through the sheets . . . no riveting or welding is required.

Write for descriptive literature on this 40' building and also companion 26' and 30' buildings.

UNITED STEEL FABRICATORS, INC.

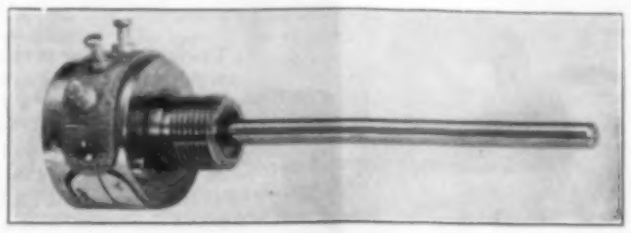
Building Sales Dept.
WOOSTER, OHIO

MANUFACTURERS OF Hollow Metal Doors and Frames • Prefabricated Metal Buildings • Corrugated Metal Window Wells • Highway Guard Rail • Structural Bridge Flooring • Corrugated Metal Pipe

If you write maker identify as IEN - 3545

RHEOSTAT . . Potentiometer type has precious metal resistance element

Source: FAIRCHILD CAMERA & INSTRUMENT CORP.
225 Park Ave., Dept. IEN, Hicksville, N. Y.



Available now for evaluation

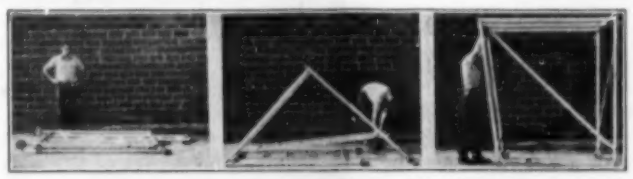
FilmPot Type 771 is a new metallic film potentiometer. It has been designed for use in servo feed back control circuits, in electronic computers, guided missiles, jet engine control, radar, electronic panel control, trimmers, motor driven devices and transducer elements such as those employed in telemetering. The resistance element assures a low temperature coefficient over a range of 100 to 200,000 ohms in the ¾ in. housing size. Low noise level, good surface life and low torque are design features. Assembly is electrically stable to 225 deg. F.

Infinite resolution of the metallic film resistance element limits "hunting." The design is available with either a servo flange or threaded mounting. The design meets JAN-R-19 Specifications for salt spray, vibration, temperature cycling and low temperature requirements.

If you write maker identify as IEN - 3546

SCAFFOLD . . Tubular aluminum frame in flat folded sections, opens on job

Source: UP-RIGHT SCAFFOLDS
1013 Pardee St., Dept. IEN, Berkeley 10, Calif.



Illustrated in "Up-Right" Scaffolds Bulletin

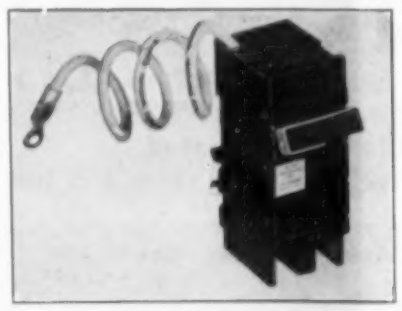
Each section of this new tubular aluminum scaffold folds down into a flat "package" measuring 6 ft. in length, 4½ ft. in width and 6½ in. in thickness. A pick-up truck can carry the sections required to build an assembly 35 ft. in height. The parts, including a stairway, open up and lock into a box frame 6 ft. in height. Weight of the section is 63 pounds.

Standard equipment includes intermediate platform frames. The platforms themselves are 5-ply fir plywood that lock in place on four locating pins and fit flush in the sections. Caster equipped vertically adjustable legs apply in the bottom section. The caster wheels can be locked or released so the scaffold is movable from one position to another. Hinged outboard supports can be applied on the bottom section when their additional stability is required. A safety railing for the top section completes the assembly. Each section locks into place on the one below it and can be opened and positioned in about a minute by one worker.

If you write maker identify as IEN - 3547

CIRCUIT BREAKER . . Plug-in design for switched neutral dispenser circuit

Source: SQUARE D COMPANY
6060 Rivard St., Dept. IEN, Detroit 11, Mich.



For safe action

Type XO is a new switched neutral circuit breaker that carries Underwriters' Approval and complies with NEC rulings for circuits to gasoline dispensing pumps and over-current devices in permanently grounded conductors. The new design can be combined with other standard XO circuit breakers for lighting or general duty circuits in conventional XO load centers.

The neutral circuit is switched by one pole of the breaker which does not have overload elements. The line-side ground is made by a flexible pigtail connecting the contacts to the standard load center neutral. The "hot" leg line connection is made by plugging the breaker into the convetional XO bus. The "hot" side of the circuit is protected by a quick make, quick break thermal magnetic operating mechanism.

If you write maker identify as IEN - 3548

Chain Lube is a "liquid grease" that has been manufactured for the past 14 years as a motorcycle, bicycle and scooter chain lubricant. It is now offered by McGlaughlin Oil Co., 3750 E. Livingston Ave., Dept. IEN, Columbus 13, Ohio, for use on chain drives in a plant. The liquid penetrates into bearing surfaces and sets itself into an adhesive grease that is not affected by hot water, salt air or high temperatures.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3549

If you write maker identify as IEN - 3550

NOW...Underwriters' Laboratories Approved

Automatic ELECTRIC TRUCKS

for semi-hazardous and hazardous locations

"101" Transporter—Type EE Approved for Class 1 & 2, Division 2 Areas

TYPE EE—UL-approved for semi-hazardous locations
TYPE EX—UL-approved for hazardous locations

Electrical industrial trucks UL-approved for use in semi-hazardous locations are now available. They include Automatic Transporters, Transtractors, and Transtackers equipped with Type EE sparkproof and dustproof protection.

Automatic has also been given UL Approval for Type EX, HF Skylifts—in 2,000, 3,000, and 4,000 pound capacities for use in hazardous locations involving fire and explosion.

If your materials handling involves these designated areas, a UL-approved Automatic truck is your answer.

Write today for full information!

Automatic 109 West 87th St., Dept. C-4 Chicago 20, Illinois

WORLD'S LARGEST EXCLUSIVE BUILDERS OF ELECTRIC-DRIVEN INDUSTRIAL TRUCKS

If you write maker identify as IEN - 3551

standardize on standard

HALLOWELL® CABINET BENCHES

Finest all-steel construction, smooth, rigid working surfaces, free-sliding, carefully fitted doors, and smooth-gliding drawers make them outstanding. Functional design blends with any industrial interior. Standard accessories permit you to custom build them to your requirements. Stocked by industrial distributors. Write for literature. STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

HALLOWELL SHOP EQUIPMENT DIVISION **SPS** JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 3552

CANNON PLUGS *for diminutive applications*

Turn to Cannon when you want midget connectors!

Type DPM-14 illustrated has 2 (10 amp.) No. 16 and 12 (5 amp.) No. 20 brass contacts. Entire assembly only ¾" x 2". Similar unit, Type DPM-A20 has 2 No. 16 and 18 No. 20 contacts. Ideal for rack, panel, and instrument applications.

You get positive contact, rugged, rectangular mounting assembly, Cannon high quality performance, with or without shell support. Types D, U, and miniature K's . . . all in extremely small space.

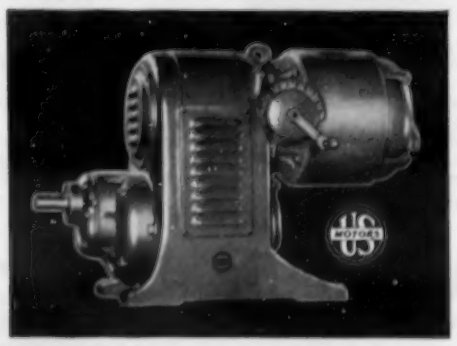
Write TODAY for Bulletins covering all the lines of Cannon Miniature and Sub-Miniature Connectors. **CANNON ELECTRIC COMPANY, 3209 Humboldt Street, Los Angeles, California.** • Factories in Los Angeles; New Haven; Toronto, Canada; London, England. Representatives and distributors in all principal cities.

Refer to Dept. 112

CANNON ELECTRIC *Since 1915*

If you write maker identify as IEN - 3553

THOUSANDS OF PLANTS NOW GETTING THOUSANDS OF SPEEDS



Miracle Motor

ANY RPM BY DIAL CONTROL

Get more production out of your present machines by powering them with U. S. Varidrive motors. No extra space required. Thousands of plants are profiting with this miracle motor. Turning a simple control handle changes speed of the Varidrive to any desired r.p.m. in ratios up to 10:1. Operators can instantly select the speed best suited for the work.

ALL-IN-ONE PACKAGE

Occupies little more space than a single speed motor. ¼ to 50 hp, 2 to 10,000 r.p.m.

U.S. VARIDRIVE *Mail Coupon for 16-pg. Booklet*

REQUEST FOR VARIDRIVE BOOKLET

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Box 2058, Los Angeles 54, Calif. or Milford, Conn.

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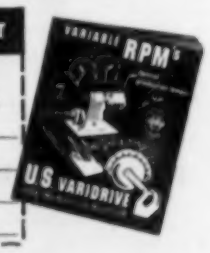
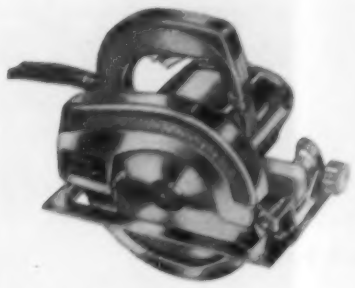


If you write maker identify as IEN - 3555

WOOD WORKING . . Portable saw rotates 7-in. blade at 5,200 rpm.

Source: STANLEY ELECTRIC TOOLS
480 Myrtle St., Dept. IEN, New Britain, Conn.



Weighs 12 pounds

Universal motor in this new portable electric saw is designed to mount a 7-in. circular blade. It is assembled in an aluminum housing on a steel base that extends on both sides of the blade. A window in the base provides a view of the blade during the sawing operation. Blade flanges protect the motor from shock loading caused by striking a nail or cutting a warped board. Shafts are mounted on ball or roller bearings.

The saw is guided by gripping a non-slip multi-grip handle with a pebbled finish. A built-in dust blower keeps saw dust away from the cut. Adjustments permit setting the blade square or at any angle to 45 degrees. At the latter setting, it will cut a dressed 2 by 4. Maximum capacity, when set square, is 2⅝ inches. The saw will take a ⅛-in. abrasive wheel. It can be equipped with a Type GA-100 ripping guide if specified.

If you write maker identify as IEN - 3556

CLEANING . . Disposable towel of flame proofed cotton, 12 by 18 inches

Source: LESHNER CORPORATION
Dept. IEN, Hamilton, Ohio

Non-woven material

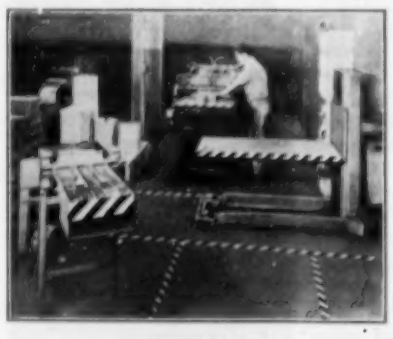
New towel has been developed to replace wiping cloths and to eliminate a laundry operation. It is available in colors or white and measures 12 by 18 in. in standard size. Other sizes can be cut to specification. The standard unit costs 1½ cents each in colors, 2¼ cents each in white.

Absorbing capacity is about six times the towel's weight in grease, oil or water. Application can be made wet or dry and, when the towel has become saturated, it can be thrown away.

If you write maker identify as IEN - 3557

MARKING . . Self-adhesive strip outlines traffic aisles, hazardous areas

Source: WESTERN LITHOGRAPH CO.
600 E. 2nd St., Dept. IEN, Los Angeles 54, Calif.



Sample on request

Hazardstripe is a new self-adhesive tape with a bright yellow and black surface. It is supplied in rolls measuring 2 in. in width, ready for application. Cloth backing can be specified for indoor use, vinyl backing for outdoor use in the presence of oil, gasoline, reflective backing for application on various types of vehicle. The stripes are 1½ in. in width for normal use and 3 in. in width where larger areas are to be covered. The material will not fade or curl away from the surface on which it is placed.

If you write maker identify as IEN - 3558

CRANE . . Portable hand operated, tubular steel assembly rates 2½ ton

Source: SAFWAY STEEL PRODUCTS INC.
6234 W. State St., Dept. IEN, Milwaukee 13, Wis.

For maintenance

One operator can move this new crane into position, lock its swivel wheel by moving the towing handle into vertical position and raise or lower a load by turning a crank on a hand winch mounted in the tubular frame. Vertical hook clearance is 22 feet. Rated load capacity is 2½ ton.

The crane was made initially to handle aircraft engines. It is suited equally well for load handling in yards and in certain types of manufacturing buildings. Weight is about 1 ton. Mounting is on two fixed dual wheel assemblies at the front, measuring 12 in. in diameter, and on a 10-in. steering caster at the rear. All wheels have aluminum cores and solid rubber tires. The crane is demountable into seven component parts. It can be assembled by untrained workers in about 2 hours without need for special tools.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3559

NOW greater versatility greater efficiency

TO IMPROVE cutting efficiency and production, three models of the Wells Metal Cutting Band Saw line are now available with expanded range of cutting speeds as standard equipment.

The new cutting speeds coupled with such proved Wells advantages as sturdy construction, ease of operation, real dependability and low cost make these machines even more profitable for you to use. Ask your Wells Dealer for full information or write, requesting catalog G-52 giving specifications and design details for all models.

See us at Booth 1447 A.S.T.E. Show

Wells

Products by Wells are Practical

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WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH.

If you write maker identify as IEN - 3560

Brand your equipment with pf decals

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- good looking
- permanent

Your nameplate identifies your equipment, keeps your trademark before prospective buyers. PF decals are designed with your product in mind. They go on quickly and last indefinitely. What's more, if you require operating instructions or wiring diagrams, PF decals put across your story at comparatively little cost. It's the brightest way of branding your equipment or setting up instructions that stay.

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PALM, FECHTELER & CO.

85 MAPLE STREET • Dept. IEN-3 • WEEHAWKEN, N. J.

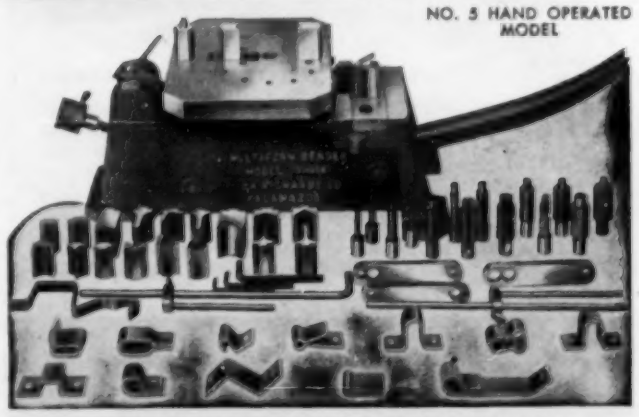
If you write maker identify as IEN - 3561

THE FAMOUS MULTIFORM BENDER CUTTER

Produces Without Special Tooling • Saves Die Costs Saves on Expensive Presses

The illustration to the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade, Spring Plants, Radio, and Electrical Equipment Manufacturers, complete with tooling for bending material up to ⅛" x 1½".

NO. 5 HAND OPERATED MODEL



FIVE-IN-ONE-TOOL—ALSO LARGER MODELS

Air Operated Models in this and Larger Sizes Available

IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPES, CUTS AND PUNCHES FLAT STOCK

J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

If you write maker identify as IEN - 3562

THIS BOOKLET CAN OPEN A DOOR FOR YOU!

...a door to faster production—easier fabrication—cost savings in your plant. This informative, fully illustrated booklet describes the whole range of Tufflex cellulose felted fibers for cushioning—protective padding—sound absorption—thermal insulation—and many other uses. It tells why Tufflex, available in many different types—is finding new jobs every day in American industry. Send now for your free copy of "The Expanding Miracle of Tufflex"—there's no obligation. Wood Conversion Company, Dept. 126-34 First National Bank Building, St. Paul 1, Minnesota.

KEEP YOUR EYES ON TUFFLEX*

Guaranteed by Good Housekeeping

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If you write maker identify as IEN - 3563

Give your appliances this EXTRA VALUE ...at NO extra cost!

MARK-TIME two-speed BELL TIMER

Normally supplied with Center Stud mounting.

The exclusive, patented 2-speed feature of this Mark-Time unit makes it TWO timers in one! . . . and puts more "sell" into your appliances!

Here's why: in the long-time position, the user can measure time up to ONE HOUR for baking, roasting, stewing and other lengthy cooking operations . . . can use it as a reminder for appointments and other household jobs, too! By moving the lever to the short-time position, the user can obtain settings within seconds for boiling eggs, pressure cooking . . . precise timing for all short time jobs up to SIX MINUTES, where even fractions of a minute are important.

At the end of the pre-set time period, in either long or short range, this timer gives a clear, resonant bell signal.

Available with a wide variety of modern dials and knobs; also in 2-hour, 12-minute range.

Write today for full details and prices.

MARK-TIME

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HARTFORD, CONNECTICUT

Manufactured and sold in Canada by SPERRY GYROSCOPE OTTAWA, Limited 3 Hamilton St., Ottawa, Ontario, Canada

"I WISH I HAD"

(Continued from page 128)

SURPLUS . . "I wish we had a buyer for all or part of a lot of five hydraulic plastic presses. Two rate 350 ton and 3 rate 180 ton. The presses are in storage at Wooster, Ohio. We will send detail information on request." **IEN W-27**

SURPLUS . . "I wish we had a buyer for a Wagner Electric motor Frame 405, Model 18E88JY196D. Rating is 12½ hp. at 1,160 rpm. and 7 hp. at 870 rpm. Operation is on 440-volt 60-cycle three-phase ac. The motor is complete with a Cutler Hammer weather tight two speed controller Model C281655A. The equipment is new. It is in storage in Cincinnati." **IEN W-28**

SURPLUS . . "I wish we had a buyer for four sizes of stainless steel washer, each size in a total of 2,500 pieces and all with $\frac{1}{16}$ in. inside diameter. Four outside diameters are ⅞, 1⅛, 1⅞ and $2\frac{1}{16}$ inches. Thicknesses are 16 gage, ⅝ in. and $\frac{3}{16}$ inch. The stock is in Spokane, Wash." **IEN W-29**

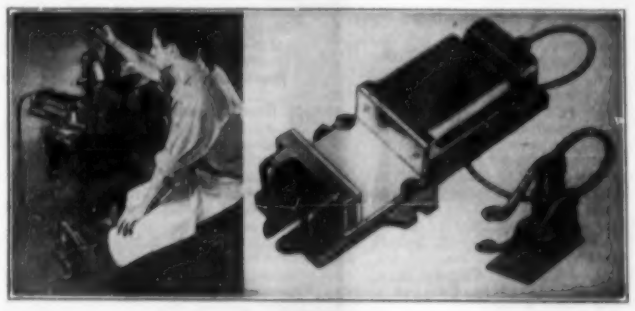
SURPLUS . . "I wish we had a buyer for 3 ton of cold rolled steel strip No. 4 temper, measuring 1½ in. in width by 0.015 in. in thickness. The material is in 150-lb. coils in storage in Oakland, Calif." **IEN W-30**

SURPLUS . . "I wish we had a buyer for two Babcock and Wilcox integral furnace boilers rating 24,000 lb. per hour each at 250 lb. pressure. The boilers are Size FF-16 No. 12-8-8 water tube with combination oil and gas burners. Equipment includes breeching, stacks, gages and attachments, steel walkways and stairs, centrifugal feed pumps, water softeners, steam turbines and speed reducers, turbine blowers and booster pumps, air compressors and receiver tanks with the associated instruments and motors. The equipment is housed at present in Amarillo, Texas, in a one story steel building with asbestos siding and roof measuring about 61 by 43 by 32 feet." **IEN W-31**

If you write maker identify as IEN - 3565

VISE . . Foot operated hydraulic, designed to apply on a machine table

Source: STUDEBAKER MACHINE CO.
1221 S. 9th Ave., Dept. IEN, Maywood, Ill.



Holds work solidly

Milvise trade names new design of the company's foot operated hydraulic vise, previously described IEN-6690-51. It is made of steel with hardened and ground jaw plates aligned parallel within 0.001 inch. Overall length is 20⅝ in. with width at 8⅝ in. and height at 6 inches. The 6 by 3-in. jaws open to 5 inches.

Pressure is applied by operating foot pedals on the hydraulic pumping unit that mounts on the floor and connects by a hose to the rear of the vise assembly. One pedal advances the movable jaw quickly. A second pedal applies holding pressure to 5 ton. Depressing a third pedal releases the pressure and permits the jaw to retract.

If you write maker identify as IEN - 3566

CALCULATING . . Digital printer has three rows of energized input keys

Source: CLARY MULTIPLIER CORP.
Dept. IEN, San Gabriel, Calif.

Details upon request

Model 1910, reading to 8 digits, and Model 1911 to 12 digits, are new in the company's line of digital readout printers. The equipment is used to total units and for assembly line control as well as to total from impulse counters in laboratory work. It is built primarily of standard adding machine parts. Additional columns of amount key solenoids can be factory installed.

A circuit breaker is provided to furnish a feed back signal to start subsequent data into the machine on automatic recordings. A set of keys permits manual operation as a standard electric adding machine. Speed is maximum at 2 cycles per second. Operation is on 110-volt 60-cycle ac. A record is printed on 2¼-in. paper tape. The two models measure 9 by 14 by 10¾ in. and 11 by 14 by 10¾ inches. Weights are 30 and 35 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 3567

...engineered to OUTLIVE your plant!

Famous Plastic Rock now unites with special steel grid reinforcing to form a practically indestructible industrial floor which withstands terrific abuse. Offered together for the first time as a complete unit—*everything included.* Non-skid, virtually wear-proof; perfect bonding, no spalling or loosening; for old or new floors of concrete or wood.

Put an end to floor maintenance. Get Bulletin 293-Q-3.

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FLOORING • ROOFING • SPECIAL PAINTS
Field Representatives Coast to Coast

If you write maker identify as IEN - 3568

A FLOAT FOR EVERY PURPOSE

No matter what your float needs are, you can meet them from Chicago Float's complete line. Where pressure and temperature requirements are critical you can satisfy them with long wearing, dependable stainless steel floats which are built to withstand pressures to 1000 lbs. and temperatures to 800° F.

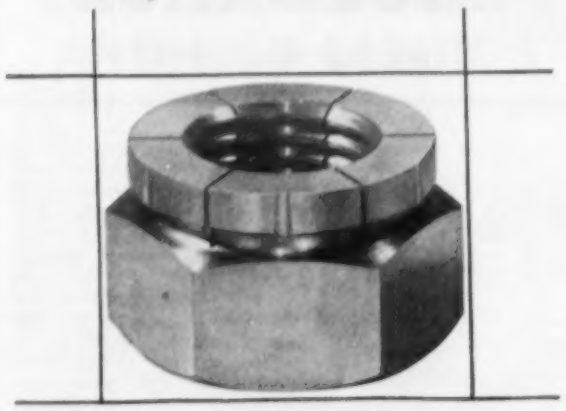
A complete line of standard seamless copper floats is available for low temperature and pressure services. In addition, you can get floats in brass, monel, steel or nickel for certain specific requirements. A wide variety of standard shapes, sizes and spud connections are offered. Special floats made to order.

SEND FOR YOUR COPY OF COMPLETE CATALOG CONTAINING ALL VITAL INFORMATION ON FLOATS

CHICAGO FLOAT WORKS
2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 3569

they won't work loose



FLEXLOC Self-Locking Nuts lock and stay tight, no matter how severe the vibration. Yet they can be easily removed and reused repeatedly. They are stop nuts too; they stay put in any position on a bolt when the locking threads are fully engaged. And FLEXLOCS are one piece, all metal—nothing to assemble, come apart, lose or forget. See your local industrial distributor for literature and samples or write STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

FLEXLOC LOCKNUT DIVISION

sps
JENKINTOWN PENNSYLVANIA

If you write maker identify as **IEN - 3570**

TAMP

TRUCK OVER

NO WAIT FOR DRYING

HERE'S THE QUICKEST, BEST WAY TO

PATCH BROKEN FLOORS

Use durable INSTANT-USE . . . a tough plastic material which you simply shovel into hole — tamp — and run traffic over immediately. Tough INSTANT-USE is ideal for repairing cracks and breaks due to relocating machines . . . or for complete overlays. NOTE: Plasticizer makes INSTANT-USE easy to scoop out of container . . . easy to level, to tamp, to use! *There's a Flexrock material for every floor condition — oil, acid, wet, dry! Tell us your problem!*

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If you write maker identify as **IEN - 3571**

This New Catalog Tells You

HOW TO SOLVE PUMPING PROBLEMS *with* AUTOMATIC REVERSING PUMPS

***Ask for* TUTHILL CATALOG NO. 105**

If you have the problem of driving a pump from a reversing shaft without changing direction of flow or port positions, you will find the answers you need in this new Tuthill Catalog on Automatic Reversing Pumps. It provides concise data on pumps for lubrication, coolant, hydraulic and circulating service, in capacities up to 200 g.p.m. and pressures to 400 p.s.i. Write for Catalog No. 105 today.

TUTHILL PUMP COMPANY
Dependable Rotary Pumps since 1927
939 East 95th St., Chicago 19, Ill.

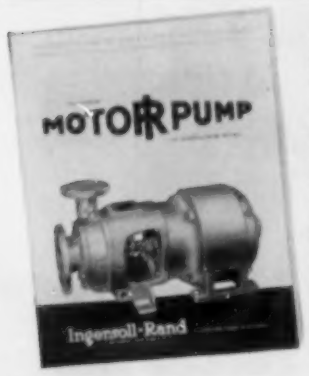
Canadian Affiliate: Ingersoll Machine & Tool Co., Ltd. Ingersoll, Ontario, Canada

If you write maker identify as **IEN - 3572**

has all the

INFORMATION

you want about pumps/



The new Ingersoll-Rand pump catalog is the last word on pump information. It shows all types of close-coupled units, and tells where they are used and how. It has specifications for every type pump in the 5 to 1800 gpm range . . . gives valuable pump engineering data . . . shows typical pump problems. Send for your copy today.

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11 BROADWAY, NEW YORK 4, N. Y.

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MARCH 1954

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82-45

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MARCH 1954

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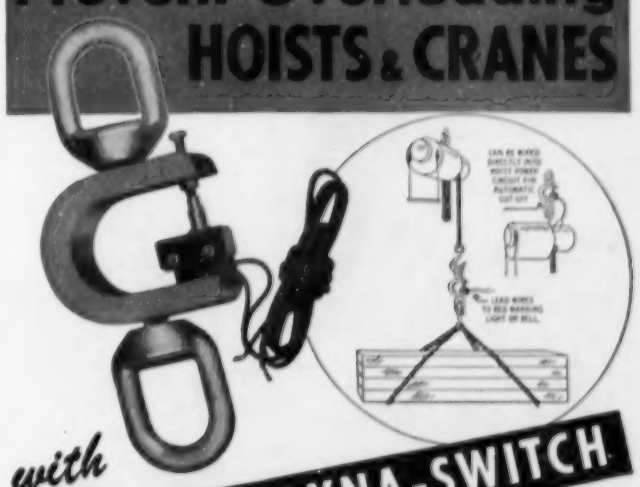

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- Meets new NEMA frame standards in the 1/20 to 1/3 hp. range.
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PORTABLE ELECTRIC TOOLS

"I WISH I HAD-"

An IEN reader is waiting for an answer to each item in this column.

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

ADHESIVE . . "I wish we had a source for an adhesive that could be used to cement a steel curb angle to concrete. The adhesive would necessarily not be brittle and must not become brittle with aging but it would not require very much strength in tension. Normal temperature of the concrete in the installation will be about 100 deg. F. We are located in Louisiana." **IEN W-20**

ENGINEER . . "I wish I had contact with a manufacturer who requires the services of an experienced plant engineer with a background of design, installation, repair and maintenance of heavy industrial equipment. I am located at present in Hawaii." **IEN W-21**

NEW PRODUCT . . "I wish we had a manufacturer interested in purchasing, outright, the patents, tools and dies for a pressure sensitive tape dispenser, together with 170 complete dispensers. The unit handles acetate, masking and cloth tapes in length increments from ½ in. through 3½ in. and to 1 in. in width or narrower. Rolls can be split to smaller widths in the machine. We are located in Newark, N. J." **IEN W-22**

PACKAGING . . "I wish I had contact with manufacturers interested in sending me parts or complete assemblies for assembly or packaging in my home in East St. Louis, Ill. I can handle small items in most any quantity." **IEN W-23**

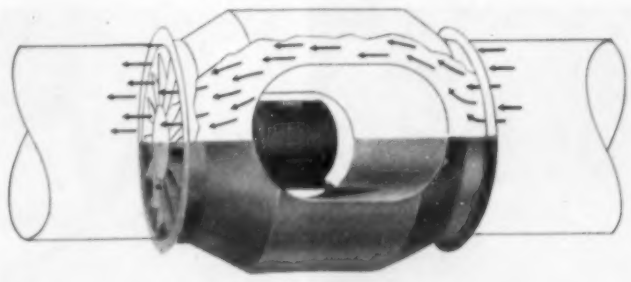
PRESSES . . "I wish we had a source from which we could purchase several used 1½ to 3-ton upright or inclined presses with 110 or 220-volt ac. motors. They can be bench or stand models. We are located in Kansas City." **IEN W-24**

SURPLUS . . "I wish I had a buyer for 9,020 lb. of cold drawn steel bar stock Type AISI C-1018. The material measures ⅜ by 1⅜ in. and is in 12-ft. random lengths. It is in storage in St. Louis in two original bundles as received from the mill." **IEN W-25**

SURPLUS . . "I wish we had a buyer for a Fuchs & Long roller coating machine to coat sheet metal with paint, dies. Width capacity is 32 inches. It is not fast enough for our production. We hold it for sale at $50 in Detroit." **IEN W-26**

(Please turn to page 125)

If you write maker identify as IEN - 3583



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FOXBORO REG. U. S. PAT. OFF. PORTABLE POTENTIOMETERS

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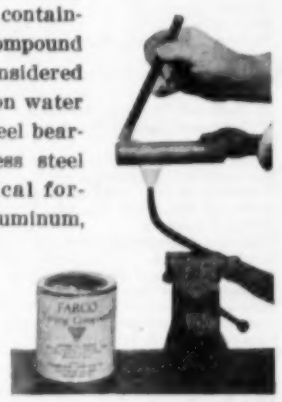

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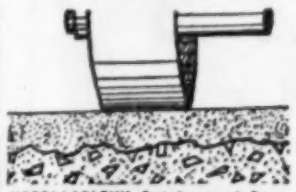
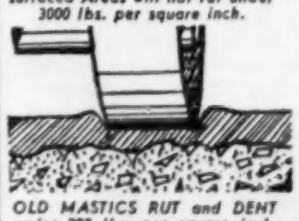
BONDS PERFECTLY — NEVER COMES LOOSE

No Chipping required — Install directly over your old concrete, wood, brick or stone floors, walks or drives. Interior or Exterior.



"PERMAFLEX" Patches and Resurfaced Areas will not rut under 3000 lbs. per square inch.



OLD MASTICS RUT and DENT under 200 lbs. per square inch.

HARD MASTIC

HEAVY DUTY • DUSTPROOF • WATERPROOF • FIRE-RESISTANT • RESTFUL • QUIET • SLIP PROOF • SANITARY

Many users apply "PERMAFLEX" over new concrete to prevent wearing away of the concrete under truck wheels and thus preserve structural strength.

The most severe trucking conditions in 1,000 of the largest industrial plants show no destructive effect on "PERMAFLEX" after years of use.

AMAZING! UNBELIEVABLE! Until you try "PERMAFLEX"

Test 100 square feet and be convinced. Write for literature and trial offer.

Atlanta—Main 4110
Chicago—Fulton 5-4666
Cleveland—TUX 4-5616
Detroit—LIN 2-4065
New York—Wis. 7-5474
Norfolk—2-9035
St. Louis—Lucas 3700
San Francisco—Gar. 1-3196

INSTALL COMPLETE 15c per square foot

PERMAFLEX PRODUCTS COMPANY

1846 NORTH FRONT STREET, PHILA. 22, PA.